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CITY OF STOCKTON

DEPARTMENT OF MUNICIPAL UTILITIES
2500 NAVY DRIVE
STOCKTON, CA 95206-1191
(209) 937-8750
FAX (209) 937-8708

April 15, 1996

Rudy Schnagl, Chief
Agricultural Unit
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, California 95827-3000

PROPOSED BASIN PLAN AMENDMENT ADDRESSING AGRICULTURAL SUBSURFACE DRAINAGE IN THE GRASSLAND WATERSHED OF THE SAN JOAQUIN RIVER BASIN

This agency has reviewed the proposed Basin Plan amendment addressing agricultural subsurface drainage in the Grassland watershed of the San Joaquin River Basin and have several comments. Our comments are arranged in accordance with the text of the proposed amendment.

Table 4. Proposed changes to the Policies

b. Activities that increase the discharge of poor quality agricultural subsurface drainage ~~are prohibited~~ will be discouraged through the adoption of prohibitions of discharge and other control measures.

Comment: This agency is opposed to striking the words "are prohibited" and the addition of the proposed language change. This is seen as backsliding, in violation of Clean Water Act policies. It is our position that no increase in the quantity of poor quality water should be tolerated.

e. Export out of the basin of accumulated salts due to agricultural irrigation and wetlands management ~~has less potential for environmental impacts and, therefore,~~ is the favored disposal option.

Comment: Should be revised to read: *Export out of the basin of accumulated salts due to agricultural irrigation and wetlands management is not the favored disposal option.*

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PROPOSED BASIN PLAN AMENDMENT ADDRESSING AGRICULTURAL SUBSURFACE DRAINAGE IN THE GRASSLAND WATERSHED OF THE SAN JOAQUIN RIVER BASIN

The San Joaquin River may continue to be used to remove [redacted] salts from the basin.

Comment: Should be revised to read: *The San Joaquin River may not continue to be used to remove these salts from the basin.* The City of Stockton is opposed to a revision wherein the San Joaquin River is cited as the only disposal option. Every effort should be made to remove the selenium on site before discharge. Selenium should not be exported in order to create water quality problems in the Delta.

f. [redacted] valley-wide drain to carry salts ~~generated by agricultural irrigation~~ out of the valley remains the best technical solution to the water quality problems of the San Joaquin River and Tulare Lake Basins. The drain would carry wastewater high in salt and unfit for reuse that is generated by municipal, industrial, and wetland management activities.

Comment: This agency is opposed to a language change that eliminates the specific identity of the cause of this pollution and refocuses attention on construction of a valley drain. The best available technology for removal of salts and selenium is reverse osmosis or electrodialysis.

h. For regulation of selenium discharges, actions need to be focused on selenium load reductions.

Comment: This agency agrees with this additional language, and further; any action taken by the Board should include selenium load reductions sufficient to eliminate selenium and salts discharged into the San Joaquin River.

Table 5. Proposed Prohibitions.

~~Activities that increase the discharge of poor quality agricultural subsurface drainage are prohibited.~~

Comment: This agency is opposed to removal of this language and also to the weaker proposed language contained in a, b, c, and d. This agency sees this change as the promotion of backsliding by the Board, in violation of Clean Water Act policies.

Table 6. Proposed changes to the control actions governing the regulation of agricultural subsurface drainage discharges in the San Joaquin Valley.

PROPOSED BASIN PLAN AMENDMENT ADDRESSING AGRICULTURAL SUBSURFACE DRAINAGE IN THE GRASSLAND WATERSHED OF THE SAN JOAQUIN RIVER BASIN

State Water Board

5. The State Water Board should seek funding for research and demonstration of advanced technology that will be needed to achieve final selenium loads necessary to meet selenium water quality objectives.

Comment: Should be revised to read: *The irrigators in the Grasslands Watershed area should provide funding for research and demonstration of advanced technology that will be needed to achieve final selenium loads necessary to meet selenium water quality objectives.* This agency believes the financial burden for testing, monitoring, and demonstrating credibility for not using best available technology for removal of selenium from the discharge should be placed upon the dischargers.

Other Entities

5. The San Joaquin Valley Drainage Implementation Program should continue to investigate the alternative of a ~~local~~ San Joaquin River Basin drain to move the existing discharge point for poor quality agricultural subsurface drainage to a location where it's impact on water quality is less.

Comment: Should be revised to read: *The San Joaquin Valley Drainage Implementation Program should continue to investigate the alternative of a San Joaquin River Basin drain to move the existing discharge point for poor quality agricultural subsurface drainage to a location where its impact on water quality is nonexistent.* This agency is opposed to the expedient introduction of pollutants into the San Joaquin River and Delta.

Actions and Schedule to Achieve Water Quality Objectives

10. Meeting load reduction milestones is highly dependent upon the effectiveness of individual actions or technology not currently available, therefore, the Regional Board will review the waste discharge requirements and compliance schedule at least every 5 years.

Comment: This agency is opposed to the above language addition, since technology is

PROPOSED BASIN PLAN AMENDMENT ADDRESSING AGRICULTURAL SUBSURFACE DRAINAGE IN THE GRASSLAND WATERSHED OF THE SAN JOAQUIN RIVER BASIN

readily available to remove selenium from the discharge in the form of reverse osmosis and electrodialysis.

Table 8. Proposed changes to Surveillance and Monitoring

~~2. The Regional Water Board will continue to monitor the major discharges, tributaries and the San Joaquin River.~~

~~3. The Regional Board will continue its investigations into pollution transport mechanisms and sinks.~~

~~4. The Regional Board will inspect discharger monitoring and treatment facilities.~~

Comment: This agency supports keeping the language to numbers 2, 3, and 4 and striking the proposed changes to same. Surveillance and monitoring should stay with the regulating entity (Regional Board). Forfeiting same would be to condone Backsliding.

General Comments:

Source Water Protection - Numerous studies of the Grasslands Area drainage demonstrate that it is a contributor of pollution to the San Joaquin River and Delta, and that keeping this ancient sea bed irrigated not only contributes to the problem of export of water from the Delta, it also causes other environmental damage in the San Joaquin River and Delta. Best available technology is available (reverse osmosis and/or electrodialysis) to clean the tail and tile water from this irrigated area. Failure to use best available technology should result in an enforcement action to cease irrigation.

Water Conservation - 180,000 acre/ft of water per year has been committed to this project which results in the creation of an environmental hazard, and then the Board orders that the Grasslands partially mitigate this hazard through dilution. This effort to solve the pollution problem by dilution is a waste and unreasonable use of water as defined in the State Constitution. Even in critically dry years the Delta export irrigators have been promised 100% deliveries, while areas adjacent to areas or watersheds of origin have been denied any water delivery. This is not a lawful beneficial use of exported water.

PROPOSED BASIN PLAN AMENDMENT ADDRESSING AGRICULTURAL SUBSURFACE DRAINAGE IN THE GRASSLAND WATERSHED OF THE SAN JOAQUIN RIVER BASIN

Thank you for the opportunity to comment on this proposed Basin Plan Amendment.

Morris L. Allen

MORRIS L. ALLEN
DIRECTOR OF MUNICIPAL UTILITIES

MLA:DJ:dj

t:\admin\grasslnd.wpd

Westlands Water District
3130 North Fresno Street, P.O. Box 6056, Fresno, California 93703-6056, (209) 224-1523, FAX: (209) 224-1560

April 16, 1996

California Regional Water
Quality Control Board
Central Valley Region
3443 Routier Road, Ste. A
Sacramento, CA 95827-3098

Gentlemen:

Subject: Staff Report on Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin Basins for the Control of Agricultural Subsurface Drainage Discharges

Although Westlands does not discharge subsurface drainage water to the San Joaquin River, the District wishes to comment on the draft Staff Report on Amendments to the Water Quality Control Plan (Plan) for the Sacramento River and San Joaquin River Basins.

The proposed amendments to the Plan will tighten regulations on the discharge of subsurface drainage water to the San Joaquin River (River) which may eventually force significant expenditures on treatment or the retirement of lands to meet the River's water quality objectives. The economic and environmental impacts of retiring large acreages of productive agricultural lands will be tremendous and must be considered in evaluating the proposed amendments.

However, this draft Staff Report does conclude that a valley-wide drain to carry salts out of the Valley remains the best technical solution to the water quality problems of the San Joaquin River and Tulare Lake Basins. Westlands concurs and supports the Policies of the Regional Board in Table 4 which include favoring the construction of a valley-wide drain. The District encourages the Regional Board to continue to promote the construction of a valley-wide drain as the only feasible, long-range solution for achieving salt balance in the Central Valley and resolution of water quality problems in the River.

Finally, the Regional Board must be careful not to interfere with a district's ability to deal with its drainage problems locally. Regulations in the areas of water conservation and irrigation practices should be left up to the districts. The district landowners and water users have the experience of managing their water supplies to encourage conservation and reduction of deep percolation. If faced with reasonable and certain discharge requirements with adequate time to respond, we are confident that districts and their landowners will be a driving force in properly managing their resources.

Sincerely,

David Orth
General Manager

cc: San Luis & Delta Mendota Water Authority

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Surfrider Foundation  San Francisco Chapter

April 16, 1996

VIA FACSIMILE AND U.S. MAIL

Mr. Rudy Schnagl
Chief Agricultural Unit
Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098
FAX (916) 255-3015

Re: Comments on the Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (May 3, 1996 meeting)

Dear Mr. Schnagl:

The Surfrider Foundation is a national non-profit organization dedicated to the protection and enhancement of coastal and inland estuary resources. Surfrider is appreciative of the opportunity to comment on the proposed Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan).

Surfrider strongly supports the Regional Board's efforts to (1) set new, more stringent selenium water quality objectives in the Grassland watershed wetland supply channels, Salt Slough, Mud Slough (north), and the San Joaquin River; (2) eliminate subsurface drainage discharges into wetland supply channels, Salt Slough, and Mud Slough (north), unless water quality objectives are being met; (3) use waste discharge requirements to control agricultural subsurface drainage discharges to the San Joaquin River below the Merced River confluence; and (4) prohibit any new agricultural subsurface drainage discharges from the Grassland watershed unless that discharge is governed by waste discharge requirements.

Surfrider's concern, however, is with regard to proposed policy statements regarding the control of agricultural subsurface drainage. Specifically, Surfrider is concerned with policy (e) which provides that "Export out of the basin of accumulated salts due to agricultural, irrigation and wetlands management is the favored disposal option." Surfrider is also concerned with policy (f) which provides that "A valley-wide drain to carry the salts

out of the valley remains the best technical solution to the water quality problems of the San Joaquin River and Tulare Lake basins. . . . The Regional Board, at this time, feels that a valley-wide drain will be the only feasible, long-range solution for achieving a salt balance in the Central Valley." (See Table 4, page 12 of the Executive Summary to the draft report, March 1996.)

Surfrider strongly objects to any Regional Board policy encouraging the export of agricultural, municipal, and industrial and other wastewater out of the San Joaquin River and Tulare Lake basins and into the Sacramento/San Joaquin Bay-Delta Estuary or to the Pacific Ocean. Though the Staff Report and Executive Summary do not mention the ultimate destination of this wastewater, the Tulare Lake Basin Staff Report dated August 17, 1995, describes the destination of this wastewater as the "Bay-Delta area." (Staff Report, at p. 57.) It has been proposed fairly frequently over the past several years that the San Luis Drain be completed to the Bay-Delta Estuary or an extension of it built to the Pacific Ocean, discharging either in or adjacent to the Monterey Bay or Gulf of the Farallones National Marine Sanctuaries. The Surfrider Foundation, other environmental groups, representatives of the fishing industry, and affected neighborhood groups all are committed to protecting our valuable coastal and ocean resources from any such proposed action.

The Surfrider Foundation therefore requests that the Regional Board clarify policy statements (e) and (f) with regard to completion of the San Luis Drain as part of its proposed amendments to the Basin Plan. If Regional Board policy does not include plans to complete the drain to the Bay-Delta or the Pacific Ocean, this should be clearly outlined in its policy statement.

If you have any questions regarding these comments, please do not hesitate to call. Thank you for your time and consideration.

Very truly yours,

Peter L. Candy

PLC/bll
schnagl

Please return any written comments to:

Peter L. Candy, Esq.
Surfrider Foundation
1827 Hyde Street
San Francisco, CA 94109

NEUMILLER & BEARDSLEE
A PROFESSIONAL CORPORATION • ATTORNEYS & COUNSELORS
ESTABLISHED 1903

JEANNE M. ZOLEZZI

Please respond to:
Stockton Office

STOCKTON OFFICE:
509 WEST WEBER AVENUE
STOCKTON, CA 95203-3166
POST OFFICE BOX 20
STOCKTON, CA 95201-3020
(209) 948-8200
(209) 948-4910 FAX

MODESTO OFFICE:
611 THIRTEENTH STREET
MODESTO, CA 95354
(209) 577-8200
(209) 577-4910 FAX

81710-20378

April 17, 1996

VIA TELEFAX AND U.S. MAIL

Rudy Schnagl
Chief, Agricultural Unit
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, California 95827-3098

Re: Basin Plan Amendment Addressing Agricultural Subsurface Drainage in the Grassland Watershed of the San Joaquin River Basin

Dear Mr. Schnagl:

The following comments to the Staff Report on the Proposed Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of agricultural subsurface drainage discharges are provided on behalf of Stockton East Water District ("Stockton East").

CONTROL ACTIONS CONSIDERATIONS OF THE CENTRAL VALLEY REGIONAL WATER BOARD

Policies and Plans -- 6. San Joaquin River Agricultural Subsurface Drainage Policy:

1. Revised policy (b) regarding the discharge of poor quality agricultural subsurface drainage.

Stockton East opposes the proposed revision which would "**discourage**" activities that increase the discharge of poor quality agricultural subsurface drainage, instead of "**prohibit**" such discharges as contained in the current Basin Plan. The staff analysis of policy needs for this section supports retention of the existing language. The 1988 Basin Plan staff report added this provision and provided that and the language may be considered for deletion 'when selenium water quality objectives are met.' By the staff's own admission "[t]o date, however,

the water quality objectives have not been met in either the Grassland sloughs or in the San Joaquin River." The failure to meet water quality objectives in Salt and Mud Sloughs or in the San Joaquin River is precisely the reason to retain the more stringent language. In fact, this Basin Plan amendment does not even propose achieving the water quality objectives in the San Joaquin River for 7 years, thus, an absolute prohibition on activities which would increase the discharge of poor quality agricultural subsurface drainage is legally mandated.

2. Revised policy (e) regarding disposal of accumulated salts due to agricultural irrigation and wetlands management.

For years, Stockton East has reminded the Regional Board of its duty under law to establish water quality objectives along the entire stem of the San Joaquin River, not simply at Vernalis. Nevertheless, the proposed revision to policy (e) recognizes that the salt problem in the San Joaquin River is due to agricultural irrigation and wetlands management but nevertheless allows it to continue. The policy statement that: "[t]he San Joaquin River may continue to be used to remove these salts from the basin so long as water quality objectives are being met" is simply a violation of law and an admission that the Regional Board is abrogating its duty.

There are no water quality objectives for salinity on the entire San Joaquin River. The only method for achieving the water quality objective for salinity at Vernalis is through fresh water releases from New Melones to **dilute** the pollution caused from the agricultural drainage. The Regional Board must eliminate the policy of allowing the San Joaquin River to be the dumping ground for salty agricultural drainage and instead take immediate action to amend the Basin Plan to add salinity objectives for the entire San Joaquin River.

The use of high quality surface water from New Melones Reservoir to dilute pollution which the Regional Board allows to be dumped into the San Joaquin River is a violation of the requirement of the California Constitution Article X Section 2 that the waters of the state be placed to their highest beneficial use. Because the water is needed to dilute pollution, it is foregone

from use for beneficial uses such as domestic, irrigation, fish and wildlife enhancement, recharge of critically overdrafted groundwater basin. The Regional Board cannot continue to violate the law in this manner through its inaction and acquiescence to the historic use of the San Joaquin River as a toxic drain.

3. Revised policy (f) regarding a valley-wide drain to carry salts out of the valley.

Stockton East supports the amendments made to policy (f) which indicate the Regional Board's support for the mandate imposed on the Bureau of Reclamation to build at out-of-basin drain which will terminate the dumping of high salinity water into the San Joaquin River and instead transport the salty water to a destination which can assimilate the high salinity water.

Regional Water Board Prohibitions -- 6. San Joaquin River Agricultural Subsurface Drainage Policy:

4. Revised prohibition regarding the discharge of poor quality agricultural subsurface drainage.

Stockton East opposes the proposed deletion of the prohibition against activities which would increase the discharge of poor quality agricultural subsurface drainage. As the Regional Board is well aware, Water Code section 12232 **prohibits** any state agency having jurisdiction over the San Joaquin River to allow any further significant degradation of the quality of the water in the San Joaquin River. In light of the clear mandate of the law, the Regional Board should retain this prohibition as it conforms with the requirements of state law.

5. New provision (a) regarding discharge of agricultural subsurface drainage from Grassland watershed to the San Joaquin River from on-farm subsurface drain, open drain, or similar drain system.

This provision should be modified to require the prohibition of agricultural subsurface drainage from Grassland watershed to the San Joaquin River from on-farm subsurface drain, open drain, or similar drain system unless such discharge began prior to the effective date

of this Basin Plan amendment **AND** unless such discharge is governed by waste discharge requirements. In order to effectively reduce the selenium load entering the San Joaquin River, and in order to effectively monitor the impacts associated with re-routing the water into Mud Slough (north), waste discharge requirements must be imposed on all agricultural discharges.

6. New provision (c) regarding discharge of agricultural subsurface drainage to Mud Slough (north) and the San Joaquin River from Sack Dam to the mouth of the Merced River.

This provision would prohibit the discharge of agricultural subsurface drainage to Mud Slough (north) and the San Joaquin River from Sack Dam to the mouth of the Merced River after October 1, 2010, unless water quality objectives are being met. Why are waste discharge requirements not required for these discharges?

ACTIONS AND SCHEDULE TO ACHIEVE WATER QUALITY OBJECTIVES

Agricultural Drainage Discharges in the San Joaquin River Basin:

7. New provision (6) regarding selenium load reduction milestones and waste discharge requirements.

Stockton East agrees that waste discharge requirements should be imposed on agricultural subsurface drainage water discharged in the San Joaquin River. This provision should be modified to require waste discharge requirement on all discharges, not simply "as necessary."

8. New provision (10) regarding Regional Board review of effectiveness of actions and technology.

Stockton East believes that a shorter review period should be established. This provision provides for the Regional Board to review waste discharge requirements and compliance schedule at least every five years. Because the San Joaquin River has been designated as a water quality limited segment with respect to selenium, the Regional Board should give top priority to insure that the requirements which they impose are actually effective and are being met. Stockton East would recommend that the Regional Board review waste discharge requirements

and attainment of the compliance schedule on a yearly basis. This annual review would coincide with new provision (12) which requires an annual review of the effectiveness of control actions by those generating the agricultural subsurface drainage.

9. Revised provision (15) regarding establishing water quality objectives for salinity on the San Joaquin River.

Stockton East applauds the recognition of the necessity to adopt water quality objectives for salinity on the entire San Joaquin River. However, absent from this provision is any definitive timetable for establishment of these objectives. We believe that the Regional Board must begin immediately to address the salinity problem on the San Joaquin River.

As you are well aware, the salinity problem has been an issue since the 1970's. Volumes of studies have been conducted which identify salinity as a major contributing factor to poor water quality in the San Joaquin River, but to date that information has been ignored.

The staff report recognizes that discharges of agricultural drainage water results in a significant degradation of the water quality in the San Joaquin River. The result of the degradation of the water quality directly impacts Stockton East because releases of water are required to be made from New Melones Reservoir to dilute the pollution from the agricultural discharges. These releases for water quality purposes have prevented Stockton East from receiving the water to which it is entitled under its contract with the Bureau of Reclamation. The Regional Board must immediately establish water quality objectives for salinity on the San Joaquin River in order to stop this useless and illegal waste of water.

CEQA REVIEW

10. Inadequate mitigation measures for potentially significant effect on San Joaquin River.

Because the Secretary of Resources has certified the Basin Planning process as meeting the requirements of

the California Environmental Quality Act (CEQA) an Environmental Impact Report is not required to be prepared for this basin plan amendment. However, documents prepared in connection with the basin plan amendment are submitted in lieu of an environmental impact report and are required to satisfy CEQA. These documents must include mitigation measures to reduce any significant or potentially significant impact that the project may have on the environment.

Attachment 1 to the Environmental Checklist Form discloses that there may be potential significant impacts from use of the San Luis Drain to bypass drainage from the wetland channels. Specifically, it states that "[t]he drainage discharged to Mud Slough (north), through the wetland bypass is, however, of poor quality and will **further degrade** the already poor water quality in Mud Slough (north)." No mitigation has been proposed to reduce the significant impact to the environment in violation of the clear mandate of CEQA. Mitigation measures must be proposed to eliminate this significant impact on San Joaquin River water quality.

GENERAL COMMENT

11. Use of the Grasslands Bypass for disposal of agricultural subsurface drainage into the San Joaquin River.

Littered throughout the entire staff report and supporting materials is the conclusion that the only way to improve the Grassland wetlands and the wetland water supply channels is to remove the selenium-laden agricultural subsurface drainage water from the wetland supply channels. This is being proposed through the Grassland Bypass project which removes from the wetland water supply channels the selenium-laden drainage water and conveys it around the entire wetland area using a portion of the San Luis Drain.

The associated benefit to the wetlands and its water supply channels are demonstrated in the staff report. However, the pressing unanswered question raised by implementation of this project is who will pay the price of improving the Grassland wetlands and the wetland water supply channels? It is clear from the supplemental materials analyzing beneficial uses, water quality

objectives, and the like, that the San Joaquin River will pay the price. This is intolerable. As was mentioned above, the Water Code **prohibits** any state agency having jurisdiction over the San Joaquin River to allow any further significant degradation of the quality of the water in the San Joaquin River. In light of the clear mandate of the law and the statements contained in the staff report and supporting materials, the Regional Board must re-evaluate the Grasslands Bypass project proposal to insure that it conforms with the requirements of state law, and to insure that it is not moving the water quality problems of one area of the San Joaquin River drainage to another.

Thank you for allowing us to comment on this staff report. We look forward to participating further in the Basin Plan amendment process.

Very truly yours,

JEANNE M. ZOLEZZI
Attorney-at-Law

JMZ/KEH:tlw
cc: Edward Steffani
Dante J. Nomellini, Esq.
John Herrick, Esq.

MINASIAN, MINASIAN, MINASIAN, SPRUANCE, BABER, MEITH & SOARES
ATTORNEYS AT LAW
(A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS)
1681 BIRD STREET
P. O. BOX 1679
OROVILLE, CALIFORNIA 95965-1679
TELEPHONE (916)533-2885
FACSIMILE (916)533-0197

PAUL R. MINASIAN, INC
WILLIAM H. SPRUANCE, INC
WILLIAM H. BABER III, INC
JEFFREY A. MEITH
M. ANTHONY SOARES
MICHAEL V. SEXTON
TIM O'LAUGHLIN

WILLIAM C. PARIS III
MICHELLE DECASTRO
MELISSA A. ATTEBERRY

JOHN CARELTON GRAY, 1872-1913
CARLETON GRAY, 1893-1944
PAUL JACKSON MINASIAN, 1933-1981

DAVID H. MINASIAN, RET. 1989

Via Facsimile Transmission & Surface Mail

April 17, 1996

Mr. Al Vargas, Agricultural Unit
Central Valley Regional Water Quality Control Board
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Re: Comments of the Exchange Contractors to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Agricultural Subsurface Drainage Discharges

Dear Mr. Vargas:

These comments are provided on behalf of the San Joaquin River Exchange Contractors Water Authority which consists of Central California Irrigation District (CCID), San Luis Canal Company, Firebaugh Canal Water District (Firebaugh), and Columbia Canal Company. These four entities are commonly referred to as the Exchange Contractors.

CEQA Checklist - Section IV - Water.

Sections f and i do not address changes in groundwater impacts that are likely to result from adoption of the standards. One manner of reducing the discharge of selenium load to the river is to draw down water levels through a groundwater pumping program as outlined in the San Joaquin Valley Drainage Program "Rainbow Report". Such a program, while reducing discharge of selenium load to the river, would also have groundwater impacts not addressed in the Staff Report.

CEQA Checklist - Section XVI - Mandatory Findings of Significance.

Sections c and d question whether the project has impacts that are individually limited but cumulatively considerable and whether the project has environmental affects which will cause substantial adverse affects on human beings. The Staff Report at page 128 within the statement of overriding consideration states that "proposed regulation is deemed to be a balance between protection of environment and minimizing economic hardships." In the economic report within

the Staff Report found between pages 179 and 185, the State's own economist writes at page 179 regarding the report submitted by Dennis Wichelns that the report "doesn't give a complete answer to the question "What are the economic impacts of reducing discharges of selenium into the San Joaquin River?""

For the reasons which follow, the Exchange Contractors do not believe that the report adequately analyzes environmental effects on human beings so as to support the statement of overriding consideration at page 128 that the "proposed regulation is deemed to be a balance between protection of environment and minimizing economic hardships."

Economic Impacts from Regulation to Control Agricultural Subsurface Drainage Discharges.

By these comments, the Exchange Contractors will demonstrate that the drainage water quality standards for selenium proposed by the amendments will result in unreasonable economic impacts upon Firebaugh and a portion of CCID of approximately 6,000 acres known as Camp 13. The unreasonable nature of the standards vis-a-vis Firebaugh and Camp 13 is due to the fact that agricultural tile drainage which discharges from those lands is not as a result of their own irrigation practices. Rather, upslope irrigation has caused a rise in groundwater levels within Firebaugh and Camp 13 so as to make tile drainage necessary. The proposed agriculture discharge standards will result in severe environmental human consequences arising from economic impacts.

INTRODUCTION

The Exchange Contractors And The Basis Of Their Water Right.

In July 1939, the Exchange Contractors, either directly or through a predecessor-in-interest became parties to an agreement with the United States entitled "Contract for Exchange of Waters" which is generally referred to as the Exchange Contract. Under the terms of this contract, the Exchange Contractors agreed not to exercise their pre-1914 and riparian rights on the San Joaquin River so long as, and only so long as, the United States delivered to the Exchange Contractors by means of the Central Valley Project or otherwise, substitute water in conformity with the Exchange Contract. The Exchange Contractors, successors-in-interest to Miller & Lux Incorporated, perfected their pre-1914 and riparian water rights on the San Joaquin River in the 1800's. Those water rights also entitled the Exchange Contractors to drainage through natural sloughs within the Grasslands area, the area now referred to as Grasslands Water District.

In the 1950's surface water was introduced into areas upslope of Firebaugh Canal Water District (Firebaugh). Pacheco Water District was formed in approximately 1953 and Broadview Water District was organized in approximately 1955 for the purpose of contracting for a surface water supply from the Central Valley Project Delta-Mendota Canal. In connection with the San Luis Act and Public Law 86-488, the San Luis Act authorized the Secretary of the Interior to construct the San Luis Unit of the Central Valley Project for the purpose of furnishing water for the irrigation of approximately 500,000 acres of land in Merced, Fresno and Kings Counties upslope of the Exchange Contractors service area. In the 1960's the Bureau of Reclamation began bringing the San Luis Unit of the Central Valley Project on-line and expanded water deliveries to lands upslope of the Exchange Contractors service area.

The Exchange Contractors sought protection for their lands before the huge amounts of surface water were applied upslope. The San Luis Act requires that a drain be built to handle the drainage of lands within the San Luis Unit and adjacent lands impacted by irrigation within the San Luis Unit. The Bureau of Reclamation assured a federal judge on two occasions that the San Luis Drain would in fact be built to convey drainage from the San Luis Unit to an outfall location which at that time was assumed to be the Delta. The San Luis Drain was completed from Kettleman City to Kesterson, but no further. Kesterson became a terminus reservoir, and when migratory bird impacts were discovered in the mid-1980's from selenium contained in agriculture drain waters ponded at Kesterson, the San Luis Drain was closed down by the Bureau of Reclamation.

The Nature Of The Drainage Problem Within The Exchange Contractors Service Area.

Since the closure of the San Luis Drain, CVP water deliveries have continued to the lands upslope of the Exchange Contractors. A consultant to the Exchange Contractors, Dr. Charles Burt, Director of Irrigation Training and Research Center, California Polytechnic University, San Luis Obispo, reports that if surface water had not been imported to Firebaugh Canal Water District's ("Firebaugh") upslope neighbors, it is probable that the shallow water table within Firebaugh would have actually dropped, because:

1. There would be less deep percolation within Firebaugh due to a shifting cropping pattern, reduced canal seepage and improved irrigation efficiencies; and

2. The natural downward drainage through the Corcoran Clay layer has increased with time and would be sufficient for Firebaugh's deep percolation.

Dr. Burt concludes, however, that this natural drainage is insufficient to handle both Firebaugh's deep percolation plus the extra deep percolation caused by the large adjacent acreages upslope of Firebaugh which are irrigated with imported water.

Firebaugh and the Camp 13 area of CCID are located on the toe of the Panoche Fan near the San Joaquin River. The upslope and adjacent areas are located on the Panoche Fan. These areas are occupied by members of the San Luis Unit: Panoche Water District, San Luis Water District, Westlands Water District, and also Broadview Water District which is not part of the San Luis Unit but receives water from the CVP.

Firebaugh and the Camp 13 area of CCID have been impacted adversely by irrigation in the upslope and adjacent areas of the San Luis Unit and Broadview Water District. The adverse impact is the discharge of drainage water through Firebaugh and CCID from subsurface agricultural drains that have high selenium concentrations.

The groundwater systems beneath the Panoche Fan consist of an upper aquifer which is semi-confined, and a lower aquifer which is confined, and these aquifers are separated by the Corcoran Clay (Belitz and Heimes, 1989, Figure 4).[1] The upper aquifer in turn is comprised of Coast Range sediments and Sierra Nevada sediments, where the Sierra Nevada sediments underlie the Coast Range sediments and overlie the Corcoran Clay (Belitz and Heimes, 1989, Figure 4). In the vicinity of Firebaugh Canal Water District and the Camp 13 area of CCID the thickness of the Coast Range sediments is about 50 feet (Belitz and Heimes, 1989, Figure 5) and the thickness of the Sierra Nevada sediments is about 300 feet (Belitz and Heimes, 1989, Figure 9).

Under natural conditions, the groundwater system beneath the Panoche Fan was recharged primarily by infiltration of water from intermittent stream flows in Panoche, Silver and Little Panoche Creeks as they traversed the Fan which produced low groundwater gradients from the margins of the valley toward the San Joaquin River (Belitz and Heimes, 1989, p.22 and Figure 11). Agricultural irrigation on the Panoche Fan changed the groundwater system (Prokopovich, 1989, Figure 26 and pp. 33-37).[2]. By 1952, ground-water levels in the lower aquifer had declined by 100 to 200 feet from the predevelopment ground-water levels (Belitz and Heimes, 1989, p.24), and groundwater levels in the upper aquifer had declined as much as 30 feet in the upper aquifer. (Belitz and Heimes, 1989, p.28). The rapid decrease in groundwater pumping that corresponded with the start of surface water deliveries from the San Luis Canal and Delta-Mendota Canal caused groundwater levels to rise 100 feet in the lower aquifer (Belitz and Heimes, 1989, p.27) and more than 40 feet in the upper aquifer (Belitz and Heimes, 1989, p.29). Along the upper boundary of Firebaugh, groundwater levels in the upper aquifer rose 40 feet during 1952-1984 (Belitz and Heimes, 1989, Figure 17).

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[1] *Belitz, K., and Heimes, F.J., 1989, Ground-water flow system of the central part of the western valley, in Gilliom, R.J. and others, Preliminary assessment of sources, distribution, and mobility of selenium in the San Joaquin Valley , California: U.S. Geological Survey Water-Resources Investigations Report 88-4186, 129 p.*

[2] *Prokopovich, N.P., 1989, Irrigation history of the west-central San Joaquin Valley, 73 p.*

The rise in groundwater levels within the upper aquifer caused the water table to rise within Firebaugh. In 1952, the average depth to ground-water within Firebaugh was about 9 feet which is a condition that persisted many decades prior to 1952 (U.S. Bureau of Reclamation, 1953, Plate 14, p. 33)[3]. In 1987, the average depth to groundwater within Firebaugh was less than 5 feet (Imhoff, 1990, Figure 6)[4]. Accordingly, the average depth to ground-water decreased more than 4 feet during 1952-1987, which corresponds to an average depth of 9 feet in 1952 and less than 5 feet in 1987. This rise in groundwater is the principal reason that subsurface agricultural drains have been required since about 1952 in Firebaugh and the Camp 13 areas of CCID.

The need for subsurface agricultural drains is the direct result of the rise in groundwater levels within the upper aquifer. This is the case because the rise disrupted the previous equilibrium between the deep percolation of applied irrigation water and the downward movement of that percolation through the Coast Range sediments that underlie Firebaugh and Camp 13 areas of CCID.

Impact On Exchange Contractors If Proposed Selenium Water Quality Standards Are Adopted.

From the above description, it is obvious that but for surface water irrigation in the areas upslope of Firebaugh and the Camp 13 area of CCID there would be sufficient natural drainage within Firebaugh and the Camp 13 area of CCID so that tile drains would not be required in those areas. It is specifically because surface water application in the upslope areas have caused rising groundwater levels in Firebaugh and the Camp 13 area of CCID that tile drains in those areas are necessary.

If the Regional Board adopts the 2 parts per billion selenium standard for Grasslands and 5 parts per billion standard for the San Joaquin River, it will essentially shut down irrigation within Firebaugh and the Camp 13 area of CCID because those lands cannot meet those standards.

Consider the following:

1. USBR allows tile water agriculture return flows to be pumped into the Delta-Mendota Canal. This means that the water received by San Luis Canal Company, Columbia Canal Company, Central California Irrigation District and Firebaugh Canal Water District artificially has added to it boron, selenium, and salts from the drainage recovery facilities of the

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[3] *U.S. Bureau of Reclamation, 1953, Firebaugh Drainage Investigation, 56 p.*

[4] *Imhoff, E.A., 1990, A management plan for agricultural subsurface drainage and related problems in the western San Joaquin Valley: San Joaquin Valley Drainage Program, 183 p.*

Bureau of Reclamation. This purposeful contamination of DMC water would not be necessary if the Bureau had completed the San Luis Drain.

2. Tile water entering the Delta-Mendota Canal from tile drains located between Delta-Mendota Canal Milepost 100.91 and Milepost 109.5 have selenium levels between 83 and 1400 parts per billion. There is therefore no way that the Exchange Contractors can be held to Basin Plan discharge standards as to this same water after its application to our lands when the water we receive has these contaminants artificially added by the United States itself.

3. Selenium concentration of water measured at Milepost 110.12 immediately downstream of all tile drain discharges range from 1 to 11 parts per billion.

4. Selenium concentration of water measured at Check 21 just upstream of the Exchange Contractors' diversion points range from 1 to 3 parts per billion.

5. During the months of March and April 1994, there was a slug of selenium in water pumped from the Delta. Selenium levels were detected at 4 and 3 parts per billion for samples taken at Delta-Mendota Canal Milepost 9.87 in March and April 1994 respectively. When the water we receive contains 4 ppb selenium, we cannot possibly discharge at the Grassland 2 ppb selenium standard.

6. The Bureau of Reclamation allows groundwater to be pumped into the Delta-Mendota Canal for water credit. In 1994, approximately 55,000 acre-feet of groundwater was pumped into the Delta-Mendota Canal just upstream of the headworks of the Exchange Contractors diversions. The TDS of this groundwater is extremely high and results in increased TDS of waters delivered to the Exchange Contractors. We have requested that the Regional Board demand a discharge permit of the Bureau or the pumpers. The Basin Plan should explain why, with your concern about water quality, you are unwilling to deal with the source. The Basin Plan should also deal with the impacts upon the Exchange Contractors' ability to meet drainage discharge standards. Pumping of high TDS groundwater into the DMC just above the location of the Exchange Contractors' diversion headworks results in the high TDS water being taken by the Exchange Contractors. Dr. Charles M. Burt, Director Irrigation Training and Research Center, California Polytechnic State University, San Luis Obispo has stated that there is a direct relationship between the need for surface water application to achieve salt balance through leaching, and the TDS of applied water. In other words, the higher the TDS, the more surface water is needed to leach salts below the crop root zone to achieve salt balance.

This need for additional surface application then acts to raise groundwater levels resulting in additional subsurface tile drainage which then compounds the Firebaugh and Camp 13 drainage problem.

Without tile drains there would not be any discharge by landowners within these districts to rivers or sloughs of drainage water containing selenium.

The Basin Plan should look at these impacts upon Firebaugh and CCID.

7. Between 1990 and 1994, the Bureau of Reclamation allowed groundwater to be pumped into the Mendota Pool, the area which forms the headworks of the Exchange Contractors diversions, for water credit. During those years, groundwater pumping into the Mendota Pool averaged approximately 55,000 acre-feet per year. We asked the Regional Board to intervene and require discharge permits. It declined to do so. We asked the State Board to intervene. It conducted an evidentiary workshop and then declined to act further pending the outcome of a study by the Bureau of Reclamation conducted at the behest of Congressman George Miller to determine seepage losses in the Mendota Pool as a result of the proliferation of groundwater pumping in that area.

The Bureau of Reclamation's Groundwater Study of Mendota Pool and Vicinity prepared by Woodward-Clyde Consultants was finalized September 1994 and transmitted to the Exchange Contractors on November 3, 1994. That report concludes that there is an apparent migration of saline groundwater from the area to the west and southwest of the Mendota Pool and that the increases in high salinity water have been attributed by some researchers to pumping-induced migration of high salinity groundwater from the areas. The report admits that "pumping from wells adjacent to the pool probably contributes to this phenomenon." (Groundwater Study of Mendota Pool and Vicinity, September 1994, p. ES-4). The Regional Board should take cognizance of the report's findings and recognize the impacts that the overpumping in the Mendota Pool area has on the ability of the Exchange Contractor districts to meet water quality discharge standards.

8. In 1994, the Department of Water Resources has entered into agreements with Westlands Water District and the Mendota Pool Pumpers Group to allow water to be moved into the California Aqueduct up Westlands' laterals 6 and 7 from the Mendota Pool for credit. Approximately 65,000 acre-feet of water will be pumped into the Mendota Pool and moved in this manner for credit in 1994. Westlands has estimated that the amount will increase to 75,000 acre-feet per year in the foreseeable future.

9. A consultant to the Exchange Contractors, Dr. Kenneth Schmidt, has been engaged as a groundwater hydrologist studying groundwater conditions and occurrences in the Central Valley of California for in excess of 25 years. Dr. Schmidt has provided evaluations for Spreckles Sugar Company which owns extensive lands for a sugar processing factory in the area west and east of the Mendota Pool; the Mendota Biomass facility which is located in the Mendota Industrial Area west of the Mendota Pool; the City of Mendota in regard to development of new public water supply wells and the degradation of groundwater quality in city wells; and for the Exchange Contractors who divert their surface water through the Mendota Pool and maintain the Mendota Dam. Dr. Schmidt was asked to evaluate impacts, if any, upon the Exchange Contractors as a result of the substantial groundwater pumping in and around the Mendota Pool area. Dr. Schmidt tells us that the area occupied by the Mendota Pool Pumpers wells is about 3-1/2 miles long and less than 1/4 mile wide, or less than 600 acres in size. At

a pumping rate of 75,000 acre-feet per year, this represents a water column more than 130 feet high over this area. Such a concentration of pumping can have a number of significant impacts, including:

a. Increased seepage losses from the Mendota Pool.
b. Land surface subsidence.
c. Expanding the size of the area already being overdrafted.
d. Large well interference effects.
*e. Enhanced migration of poor quality groundwater from the west.

10. Dr. Schmidt further tells us that an area of high salinity groundwater has been present for decades in the upper aquifer above the Corcoran Clay southwest of Mendota. Presently there is an easterly or northeasterly direction of groundwater flow in this aquifer. Thus, the poor quality groundwater has been slowly moving toward the Mendota Pool. However, the pool pumping greatly enhances the movement of this poor quality groundwater by increasing the hydraulic gradient substantially. For example, the City of Mendota's water supply has already degraded from approximately 1,000 TDS in the late 1980's to approximately 2,000 TDS in 1994 due to the migration of poor quality groundwater to the northeast. The chemical quality of water pumped from other wells near the Mendota Pool has also substantially degraded in recent years.

These facts demonstrate that subsurface drainage problems are exacerbated and groundwater quality problems created by upslope irrigators and groundwater pumpers over whom the Exchange Contractors have no control.

The Regional Board should consider these impacts upon the Exchange Contractors when it establishes discharge water standards which the Exchange Contractors and principally Firebaugh and the Camp 13 area of CCID cannot possibly meet through no fault of their own.

The adoption of standards as part of a Basin Plan which cannot be met by the Exchange Contractors because the Regional Board itself refuses to regulate the inclusion of selenium, boron and TDS in general in the waters received by the Exchange Contractors for irrigation purposes or which migrate downslope into the root zones of our fields, will have a disastrous financial impact and result in extreme environmental consequences to the Exchange Contractors which must be identified and mitigated if possible by your plan, because:

1. Adoption of regulations which do not take into account the inability of the agricultural users and water purveyors of the Exchange Contractors to meet the standards places them in the position of being required to go out of business because of causes which they do not control, have tried through litigation and extensive public participation to remove and which are in the control of the Regional Board and State Water Resources Control Board *i.e.*, the introduction of these substances into the DMC and Mendota Pool by others in quantities which exceed the standards of the Basin Plan.

2. The Basin Plan standards do not reflect that the amounts of the deleterious materials added to waters by the Exchange Contractors and their landowners is negligible. The violation of the Basin Plan standards will be caused by others, but the enforcement will be against the Exchange Contractors lands because this is where the discharge "appears." Any administrative plan such as a Basin Plan must consider the environmental impacts caused by economic burdens upon lands which have no physical ability to mitigate the condition.

The possible mitigation measures which should be included in the Basin Plan include:

(i) Provisions that a violation of the Basin Plan standard will not be found to exist if the discharge can be shown to have been caused by the acts of the United States or upslope irrigators even though the violation is detected within or adjacent to the Exchange Contractors service areas.

(ii) That economic, regulatory and monitoring costs which would be applied to lands within the Exchange Contractors where the symptoms "appear" will, before those burdens are placed, include regulatory enforcement by the Regional Board and State Water Resources Control Board to recover those costs from the parties causing the condition, i.e., the Bureau of Reclamation and the upslope irrigators, prior to enforcement upon the Exchange Contractors.

(iii) That a violation of the Basin Plan standards will not be found to exist if the amounts of deleterious materials added to the waters received by the Exchange Contractors by the Bureau of Reclamation or third parties operating with the consent or forbearance of the Bureau of Reclamation, if not added, would have resulted in no violation existing.

(iv) That the Exchange Contractors service area existed prior to the existence of the upslope irrigation within the San Luis Unit. The Exchange Contractors clearly did not create conditions through drainage in Grasslands or within the San Joaquin area which would violate the Basin Plan standards. Therefore, the standards should specify that the drainage load, constituents and concentrations from the Exchange Contractors will be given first priority, and established as a base upon which the later developed agriculture lands will be permitted to drain so long as the Basin Plan standards are not exceeded. The only means of mitigating the disastrous environmental consequences of shutting down the farming upon 250,000 acres of land which pre-existed the lands being farmed in the Bureau's San Luis Unit is to allocate those lands the first amounts of load concentration and to permit drainage above that "baseline" only to the extent that the Basin Plan standards are met.

Basin Plan Proposed Selenium Discharge Standards Cannot Be Met.

One can see from the above that where delivered surface waters have high quantities of selenium introduced into them and waters delivered from the Delta contain higher quantities of selenium than that which can be discharged under the Basin Plan proposed standards, that it is impossible to meet those standards. Consider the following:

The Grasslands area, now Grassland Water District, through Miller & Lux, sold its water rights to the Bureau of Reclamation and since then has developed through negotiation with the Bureau and through developing a return-flow from CCID, Firebaugh and San Luis Canal Company, a water right. So after selling its water rights, the Grassland area has now developed a water right which is being permitted to adversely impact prior rights to water and drainage which are first in time and right ahead of Grasslands. The result of the development of Grasslands' water right is the imposition of impossible-to-meet discharge water quality standards on Firebaugh and CCID who have historically drained through the Grasslands area. The imposition of these drainage standards results in a taking of the drainage rights which the Exchange Contractors maintained on account of their Miller & Lux water rights through natural sloughs through the Grassland area.

The beneficial uses of water must be balanced in establishing both discharge standards and Basin Plan objectives. Because the natural channels through the Grasslands are used for water deliveries to the wildlife habitat area and were used for both drainage of the Exchange Contractors lands and wildlife enhancement with no harm for years, this dual purpose must be balanced to allow both uses. To recreate the distribution system for surface water within the Grasslands would cause the incurrence of millions of dollars of cost, yet the economic consequences analysis does not include a mention of these factors. In order to comply with the law, we believe that your Basin Plan analysis must provide a balancing and consideration of alternatives in regard to the continued availability and use of agricultural water from the Exchange Contractors for Grasslands irrigation and wildlife habitat. This balance requires at least an analysis of the costs to be incurred in attaining the proposed 2 ppb standard in finding alternative water supplies and delivering them through new conveyance facilities compared to the costs of reducing the presence of selenium in the Exchange Contractors drainage through regulation of the Bureau of Reclamation and upslope irrigators. Without this, the plan is deficient.

Misguided Environmental Zeal Causes Economic Chaos.

The Regional Board should not substitute environmental perfection for reasonable solutions and standards which balance economic viability and environmental protection.

The Basin Plan water quality discharge standards for selenium which, if adopted, will essentially put Firebaugh and 6,000 acres of CCID out of business, is a misguided attempt to achieve environmental perfection at the expense of economic undertaking. The fact that the Exchange Contractors were here first must be recognized and count for something.

The Regional Board staff and Board members have an opportunity in this Basin Plan review to provide a good faith analysis of alternatives, costs, and impacts from costs in order to find the most advantageous combination of standards, techniques for management of discharges and agriculture water use to maximize the beneficial uses of water. We cannot afford to continue to set goals or standards which artificially please environmental interests without

balancing and reducing those goals if the environmental consequences due to the economic burdens will (1) deprive the Grasslands of substantial water supplies, (2) require substantial water to be removed from agriculture lands to provide a new supply to the Grasslands, or (3) put out of business the lands where the problem appears, while doing nothing to prevent the problems being caused by the Bureau of Reclamation and upslope irrigators.

Suggestions For Implementation Of Proposed Standards.

Because the Exchange Contractors historic water rights entitle them to operating priority to maintain their agricultural uses of water, the following suggestions are made in the event that the Regional Board decides to go forward with the proposed discharge standards:

1. The Exchange Contractors should be accorded baseline on a high percentage of the total quantity and load concentration for discharge of selenium, boron and TDS permitted into the Grasslands and San Joaquin River. The Bureau of Reclamation and those entities upslope of the Exchange Contractors whose surface water irrigation practices have resulted in the creation of drainage problems within the Exchange Contractors service areas should be relegated to the remaining available percentage of selenium or other constituent discharge up to the Basin Plan standard.

2. Upslope areas should be required to maintain a proper water balance through conjunctive use of surface and groundwater supplies in order to reduce hydraulic gradient water impacts within the Exchange Contractors service areas.

3. The Exchange Contractors should be accorded sufficient time to comply with narrative and/or numeric standards for selenium discharge so as to mitigate economic impacts within their service areas.

4. Parties that introduce irrigation return flow or groundwater into mainline federal and state water conveyance facilities and into Mendota Pool should pay all costs associated with meeting water quality discharge standard increases which are brought on by having introduced the irrigation return flow and/or groundwater into mainline delivery systems. The purpose of this recommendation is to have those who add to a drainage control problem pay a contribution toward drainage control. A discharge permit procedure should be established immediately for these additions to our source waters.

California Environmental Quality Act ("CEQA").

As stated in the Staff Report, any regulatory programs of the Regional Board certified as functionally equivalent to the CEQA process must satisfy the documentation requirements of Title 23, C.C.R. Section 3777(a). The environmental checklist and determination with respect to environmental impacts does not satisfy that requirement because it fails to consider the severe environmental consequences to human beings arising from certain economic impacts.

Short Run Economic Impacts 1 to 5 Years.

If the Basin Plan water quality discharge standards are established then Firebaugh Canal Water District consisting of 21,761 acres will be unable to meet the discharge water quality standards. Neither will approximately 6,000 acres in the Camp 13 area of CCID meet these standards. Nor will Panoche Water District consisting of approximately 35,000 acres, Broadview Water District consisting of approximately 10,000 acres, Pacheco Water District consisting of approximately 4,000 acres, or Charleston Water District consisting of approximately 3,000 acres meet these water quality standards. We will focus on the Firebaugh and CCID economic impacts.

Without a discharge being permitted of drainage flows from the Firebaugh and Camp 13 area of CCID, water will need to be recirculated and reused on lands. To fully recycle all water within Firebaugh it will be necessary for the district to expend approximately $17 million to install pipelines and pumping plants to pump drainage water to the headworks of Firebaugh Canals. These works would take approximately 2 years to install assuming that financing can be obtained. Furthermore, assuming that financing can be obtained the debt service on Firebaugh's 21,761 irrigable acres will equal $781 per acre of debt, exclusive of interest which will have to be repaid within the project period of approximately 5 years.

Unfortunately, this option does not take into consideration the fact that in addition to are loading up heavy debt service on the irrigable acreage, we will also be loading up Firebaugh lands with salt. Currently, Firebaugh produces approximately 2,500 acres of tomatoes, 13,000 acres of cotton, and approximately 2,500 acres of melons and honeydews. The production of these crops permits the growers within the Firebaugh service area to maintain agricultural viability. Within the 6,000 acres of CCID in Camp 13, typical crops include cotton, sugar beets, alfalfa and tomatoes.

Many of these crops are not salt tolerant. Therefore, the requirements to recirculate drainage water in these areas will result in taking out of production the tomatoes, cotton, melons, honeydews, alfalfa and sugar beets. About all that can be substituted for those crops would be grain and barley which are more salt tolerant and could grow for a time. However, grain and barley are not what we consider to be high value crops and the same growers who will now have substantially higher debt service placed upon their lands will have no economic means of retiring the debt service.

Dr. Burt has further advised us that recycling agricultural drainage water containing high TDS and other constituents cannot be sustained. The salt builds up on the land which then requires additional water to leach salt below the root zone; and the additional water being applied for this very purpose contains higher salts which adversely impacts the leaching objective. After a few years the land becomes so salty that salt intolerant crops won't even germinate and other crops will not reach maturity.

Financing Considerations.

Jeff Bryant, General Manager of the Firebaugh Canal Water District, reports that he continually receives calls from the agricultural lending departments of the Bank of America, Wells Fargo Bank, Bank One and Producers Cotton who want to know if any of Firebaugh's drain water is going to be recycled. He has been advised by agricultural lenders that crop and operating financing is not available when a water distributing entity recycles its drain water. Obviously, agricultural lenders realize that recycling drain water is the beginning of the end of the viability of the land to sustain irrigation.

Consequently, we are faced with an untenable situation: in order to recirculate all water within the District it is necessary to obtain financing for approximately $17 million to install pipelines and pumping plants; this debt service equals approximately $781 per acre exclusive of interest which must be assessed to each acre within Firebaugh service area; however, it is not feasible to enter into this project due to the fact that it is unlikely that Firebaugh can obtain financing. And, even if financing were available, the land cannot sustain the debt service because it is limited by salt buildup to low value crops.

The second area we will address is the Grassland Bypass Project for use of a section of the previously closed San Luis drain.

Firebaugh is a party, along with other entities, which have formed the Grassland Basin Drainage Management Activity Agreement. Pursuant to this agreement, a 28 mile section of the previously closed San Luis Drain is to be reopened to stop irrigation drainwater from flowing through channels used by privately held grassland wetlands within the Grassland Water District area. This project, known as the Grassland Bypass, was developed and agreed to by the Bureau of Reclamation and the San Luis and Delta Mendota Water Authority, which serves as the umbrella agency for the Grassland Drainers' drainage activities. The agreement will extend for five years, subject to review after the initial two years of operation.

The agreement establishes the mechanism by which agricultural drainwater tainted with salts will be carried by a concrete lined canal around the Grassland wetland areas and is then connected to Mud Slough which drains into the San Joaquin River.

Under the agreement, the following environmental commitments have been made:

- To develop a drainage entity under the San Luis Delta Mendota Water Authority among several of the Grassland Basin irrigation and drainage districts with authority sufficient to provide regional drainage management.

- To remove agricultural drainage flows from 93 miles of the Grassland Basin wetland channels, including Salt Slough, to free

them for delivery of fresh water supplies for refuges and privately owned wetlands through the Central Valley Project Improvement Act.

- To monitor the drainwater discharged into the San Joaquin River by not exceeding monthly and annual selenium loads established under the agreement with annual selenium load reductions.

- To operate the Grassland Bypass under a waste discharge requirement issued by the Central Valley Regional Water Quality Control Board.

- To develop a long-term regional drainage management plan.

The reopening of this section of the controversial San Luis Drain has been hailed by wildlife managers and the Grassland Water District as a project worthy of widespread support.

The economic commitment which the Districts must make are substantial. They were placed in the position having to agree at the outset to front capital costs and those costs associated with load reductions of selenium when they had no assurance that they would not be shut down in a very short period of time. Nevertheless, Firebaugh and CCID Camp 13 area along with the other members of the draining entities have undertaken that obligation. We would expect that the Regional Board will continue to work with these entities to achieve load reductions while, at the same time, maintaining agricultural viability within their service areas.

Economic Impacts on Human Beings.

It is generally recognized that an economic multiplier of 3.5 must be applied to every dollar's worth of agriculture production in order to take into account the impacts on the local area, the county, the region, and the state. Within the area served by Firebaugh and Camp 13 area of CCID there are several farm implement dealers: two Caterpillar dealers, a John Deere dealer, and a Case International dealer. There are at least two fertilizer companies in the area, and seed companies exist for every crop grown. There are at least two irrigation equipment companies in the area which carry everything from gated pipe, sprinklers, and siphon tubes to mainline pipes and other irrigation equipment.

Farm workers consist of a huge labor force which funds local housing, including hotels. The farm workers support local restaurants and stores. Furthermore, farm workers as well as farmers and agricultural water entities support new car and truck sales, vehicle repair shops and parts shops in the area.

These economic impacts upon human beings must be taken into consideration by the Regional Board. Establishing a drainage water quality discharge which cannot be met will result

in land fallowing, lost jobs, reduction of purchases to implement dealers, fertilizer dealers, seed companies, and irrigation equipment companies, not to mention impacts upon farm workers and their families.

Long-term Impacts - Land Fallowing.

Implementation of the stringent water quality standards placed upon discharges of agricultural drainage will result in land fallowing. This fallowing could commence immediately but it is likely that wide-spread fallowing will not occur for approximately 5 years. At that time the Regional Board should expect to see approximately 22,000 acres to be fallowed within Firebaugh, 35,000 within Panoche, 10,000 in Broadview, 4,000 in Pacheco, 3,000 in Charleston and 6,000 in CCID. Long-term impacts would be expected to spread to include San Luis Canal Company and Columbia Canal Company. The economic impacts associated with the loss of agricultural revenue from this acreage is mind boggling: Lost tax revenues to the county. Lost income taxes to the state and federal government. Lost property taxes to the county. Inability to support any of the agricultural support entities which we have discussed previously. The average annual gross crop value within the Exchange Contractors service area is between $1,000 to $1,500 per acre and in excess of 200,000 acres is farmed. It is generally accepted that farm work requires one full time farm worker per 80 irrigated acres. Consequently, we can readily see that the economic impact of fallowing just the service area of Firebaugh and 6,000 acres of CCID amounts to approximately $43 million per year of lost crop production; and assuming that the third party effect multiplier of 3.5 per each dollar of agriculture production is applied, the real economic impact is more like in excess of $150 million per year.

Additionally, we would fully expect that the fallowing of just this acreage alone would result in the loss of in excess of 350 full time farm working jobs.

The Regional Board cannot assume that its regulation of drainage will not have the economic impacts and environmental consequences on human beings that have been set forth here. The plan must conduct environmental review to determine the full nature and extent of these impacts.

For all of the reasons set forth herein, we believe that substantial adverse effects on human beings are likely and consequently, if the Regional Board is determined to adopt the Basin Plan's agricultural discharge standards, mandatory findings of overriding significance will

need to be adopted after the preparation of a much more comprehensive and detailed economic and environmental analysis as described above.

Very truly yours,

MINASIAN, MINASIAN, MINASIAN,
SPRUANCE, BABER, MEITH & SOARES

By _____
MICHAEL V. SEXTON

MVS/dr

CLEAN WATER ACTION

Board Members
Central Valley RWQCB
c/o William H. Crooks, Executive Officer
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

April 17, 1996

VIA Facsimile and U.S. Mail

Subject: Comments on the amendments to the Water quality Control Plan for the Sacramento and San Joaquin River Basins (May 3, 1996 meeting)

Dear Board Members:

Clean Water Action vehemently opposes the proposed policy changes (on page 12, Table 4, lines e. and f.) as being completely unsubstantiated by science or environmental concerns.

One of the most obvious routes for discharge to the Ocean of accumulated salts is through a pipe to San Francisco which would utilize a projected crosstown tunnel. This route has been studied by the Central Valley Project. However, there has **never been a scientific and environmental study of the potential long term environmental effects on the ocean habitat of discharging large salt loads through the San Francisco Ocean Outfall**.

It is irresponsible to recommend that the best management of accumulated salts from agricultural irrigation is to dispose outside the basin when one of the most obvious disposal projects has not been studied for its affects on the marine environment. Clean Water Action raised environmental questions of ocean discharge of Central Valley salts in response to the proposed Environmental Impact Report of the Alternatives to Bayside Discharge produced by the City and County of San Francisco. None of our questions have yet been answered. We have never seen an environmental study by either San Francisco or the Central Valley RWQCB of the effects on the Ocean from the most likely point of discharge of your out-of-basin salts.

Please leave your old language at least in the policy changes -- even though that language is over-reaching in making an unsubstantiated recommendation for out of valley drainage.

The only real environmental solution is salt drainage prevention and fair market value retirement of land with toxic soil. Clean Water Action would be delighted to work with the regional board and agricultural interests to generate the funding needed for this superior and economically beneficial approach.

Sincerely,

Bruce Livingston
Wastewater Committee Chairman
Clean Water Action
(415)431-3430 (work number)

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California Office * 944 Market St. #600 * San Francisco CA 94102 * 415/362-3040
National Office * 1320 18th St. NW * Washington, D.C. 20036 * 202/457-1286

(510) 779-7050

April 17, 1996

Mr. William Crooks, Executive Officer
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Dear Mr. Crooks:

The City of Antioch has been reviewing the documents prepared for the hearing on May 3, 1996, on a Basin Plan Amendment addressing agricultural subsurface drainage in the grassland watershed of the San Joaquin River Basin.

We believe that the selenium concentration will increase in the San Joaquin River due to the use of the San Luis Drain and while this may improve water quality in the grasslands channels, it will certainly decrease water quality in the San Joaquin River. This directly affects our treated water customers and all the other public and private water agencies utilizing the Contra Costa Canal as our primary water source.

I am aware of the total maximum daily load proposed for selenium; however, industry in the Bay Area is not allowed to discharge in this manner and neither should the agriculture industry. Removing land from production is the only economical solution to this problem. The State has allowed irrigation of hazardous lands, and it should be stopped. We cannot continue to grow cotton at the expense of our public's health.

We urge the Board to adopt a zero discharge policy and remove all hazardous lands from production.

Thank you for the opportunity to comment on the Proposed Basin Plan Amendment.

Very truly yours,

STANFORD E. DAVIS, P.E.
Director of Public Works

SED/sml
cc: Mayor and City Council
City Manager
City Attorney

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State of California

Memorandum

TO : William H. Crooks
Executive Officer
Central Valley Regional Water Board

DATE: APR 17 1996

Jesse M. Diaz, Chief
Division of Water Quality

FROM : **STATE WATER RESOURCES CONTROL BOARD**
901 P Street, Sacramento, CA 95814
Mail Code G-8

SUBJECT : REVIEW OF PROPOSED AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SACRAMENTO RIVER AND SAN JOAQUIN RIVER BASINS CONCERNING THE CONTROL OF AGRICULTURAL SUBSURFACE DRAINAGE DISCHARGES

Thank you for the opportunity to review the March 1996 Staff Report on the subject amendment. The following staff comments from the Division of Water Quality and the Office of the Chief Counsel make reference to page numbers of the Regional Water Board staff report on the proposed amendment.

1. "Limited Beneficial Use" Terminology (p.18)

   The term "L", for "Limited Beneficial Use", is introduced in Table II-1, but is not well defined. A brief description or example of a "Limited Beneficial Use" should be added to the narrative text under "Surface Waters" on page 16.

2. Hydrologic Unit Number (p.19)

   The hydrologic unit number should be included with the Grassland Watershed in Table II-1 in order to simplify finding Mud and Salt Slough on a surface water map and to provide consistency with other surface water bodies and beneficial uses. The hydrologic unit number corresponding to the Grassland Watershed is 541.20.

3. San Joaquin River Subsurface Agricultural Drainage (p. 26 and 27)

   The staff report states that the prohibition of discharge of agricultural subsurface drainage water to Salt Slough, Wetland Water Supply Channels, and

Mud Slough (North) may be reconsidered if a separate Conveyance Facility or bypass channel to convey agricultural subsurface drainage to the San Joaquin River is not implemented. Since the basin plan mentions both a valley-wide drain and a grasslands bypass channel, it is not clear which of these, or either, would satisfy this reference to a "bypass channel". This should be clarified.

4. Water Quality Objectives (p. 29)

   a. Table IV-4 provides selenium water quality objectives and performance goals based on a schedule of compliance to meet the objectives. We recommend that both maximum and continuous objectives be listed in this table to be consistent with Table 3 of the Draft March 1996 Executive Summary of the proposed Amendments (page 11). Table IV-4 gives the impression that, prior to the date of compliance with continuous objectives, no objectives apply, while the "maximum" objective is in effect proposed to serve as the continuous objective during this period. The table should be revised to make this clear.

   b. The terms "average" and "mean" are used interchangeably. One of these terms should be used consistently in Tables IV-4 and III-1.

5. Selenium Load Reduction Milestones (p.30)

   While the text states that "Selenium load reduction milestones will be incorporated into waste discharge requirements as effluent limits", the basin plan amendments are silent as to what these milestones will be. Under the section titled "Regional Water Board Prohibitions" (page 26), agricultural subsurface drainage discharge of selenium is prohibited in amounts exceeding 8,000 lbs/yr. The Basin Plan should make clear whether this amount will be changed over time using scheduled milestone reductions and whether limiting selenium loads to 8,000 lbs/yr will be protective of beneficial uses for downstream reaches for the San Joaquin River. In addition, anticipated selenium water quality parameters (e.g., concentrations/impacts) that are likely to be associated with the levels of discharge should be specified.

APR 17 1996

If you have any questions on this subject, please call me at 657-0756. You may also contact Bob Ford, the staff person assigned to this issue, at 657-1117, or Paul Lillebo, Chief of the Basin Planning Unit, at 657-1031.

Grassland Water District

22759 S. Mercey Springs Road
Los Banos, CA 93635
Telephone (209) 826-5188
Fax (209) 826-4984

April 19, 1996

Mr. William H. Crooks, Executive Officer
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Subject: **Comments of Grassland Water District / Grassland Resource Conservation District on March 1996 Draft Report, Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins**

Dear Mr. Crooks:

The Grassland Water District (GWD) and Grassland Resource Conservation District (GRCD) appreciate the opportunity to comment on the above referenced draft report. Our specific comments are as follows:

Proposed Selenium Objective for Wetland Water Supply Channels

The GWD strongly supports the proposed 2ppb selenium objective for the wetland water supply channels identified in Appendix 1.

As is stated in the report the amount of water available to Grasslands and the refuges for wetland management has increased considerably since the Basin Plan Amendment of 1988. The report correctly notes that due to the increased wetland water supplies brought about by the 1992 Central Valley Project Improvement Act (CPVIA), the plumbing modifications made within the Grassland Basin during the late 1980's to segregate freshwater from drainwater can no longer provide adequate wetland protection. The task of assuring this protection has clearly been placed with the wetland managers who, on numerous occasions during the last several years, have been forced to delay or abandon critical wetland water deliveries because the system was overburdened by contaminated drainwater.

In this regard it should be noted that the amounts of water allocated for wetland areas within the Grasslands watershed both pre and post CVPIA were and are substantially more than the amounts indicated on page 10 and again on page 60 of the report. Prior to CVPIA the Report on Refuge

Water Supply Investigations, USBR, March 1989, had identified existing firm supplies for those refuges impacted by drainwater (GRCD, Los Banos WMA, Kesterson NWR & San Luis NWR) of 59,700 acre feet per year. This amount was augmented by an additional 40,000 AF annually when water authorized by the 1954 Grasslands Act was called upon by the refuges.

With the enactment of the CVPIA, full Level 4 supplies for these same wetland areas plus water supplies for those new refuge lands acquired partly as mitigation for Kesterson Reservoir will, by the year 2002, total 256,000 acre feet — not 180,000 acre feet as stated in the report. The amount scheduled for delivery to these areas during the 1996 water year is nearly 210,000 acre feet.

These revised allocation numbers effectively serve to underscore the need for adequate protection of the wetland supplies and lend further support, we believe, for the adoption of the 2ppb selenium objective for the wetland water supply channels.

Sincerely,

Don Marciochi, General Manager
Grassland Water District

DM:mc

Community
Development
Department
County Administration Building
651 Pine Street
4th Floor, North Wing
Martinez, California 94553-0095
Phone: (510) 335-1227

Contra
Costa
County

Harvey E. Bragdon
Director of Community Development

April 17, 1996

Mr. Karl Longley
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

RE: Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Agricultural Subsurface Drainage Discharges

Dear Mr. Longley:

Contra Costa County has a vested interest in the management of agricultural wastes from the San Joaquin Basin as county residents depend on the San Joaquin River and Delta, the receiving waters for current and proposed Central Valley discharges, for drinking water, industry, recreation, and tourism. We have a number of concerns with the proposed amendments to the Basin Plan as they pertain to the maintenance of downstream water quality, and we are pleased to have this opportunity to address our comments to you.

While some of the proposed changes to the Basin Plan constitute significant improvements to the regulation of agricultural wastes, many proposed amendments would not adequately protect water quality and many existing Basin Plan policies which should be amended are left intact. Contra Costa County has submitted comments on the proposed Basin Plan amendments throughout their development, and while we have seen some improvements, our fundamental concerns remain the same. We continue to recommend that the Regional Board:

- eliminate policy statements which endorse a valley-wide drain to the Delta
- accelerate compliance with water quality objectives
- strengthen implementation measures to guarantee water quality improvements

These suggestions are explained in greater detail below.

Valley-wide Drain: Contra Costa County fundamentally opposes construction of an isolated drain to the Delta and we are disturbed by statements in the Basin Plan advocating such a facility. Policy (f) specifically endorses a valley-wide drain as "the best technical solution to the water quality problems of the San Joaquin River and Tulare Lake Basins." We strongly disagree. Constructing

a valley-wide drain does not solve a water quality problem, it simply transfers that problem somewhere else. Since the Delta remains the only plausible site for a drain terminus, and since Delta waters are pollution-impacted, ecologically fragile, and relied upon by large portions of the state for drinking water, we believe that policy (f) advocates a particularly ill-advised means of dealing with the agricultural drainage problems of the San Joaquin Basin. With many large-scale efforts underway to repair the broken Bay-Delta system, most notably CVPIA and the CALFED Bay-Delta Program, policies which advocate further degradation of this important resource are indefensible, particularly when they originate from an agency which is responsible for protecting water quality.

We believe that endorsement of a valley-wide drain contradicts Basin Plan policy (g) which states that "the optimization of beneficial uses on a watershed basis will guide the development of actions to regulate agricultural subsurface drainage discharges." We are not satisfied that water quality concerns in the Delta portion of the San Joaquin watershed were given adequate consideration in the decision to advocate a valley-wide drain and do not believe that discharging wastes from the Tulare Lake Basins to the Delta would be consistent with a watershed approach to drainage management. Likewise, Basin Plan policies (e) and (f) contradict existing State Water Resources Control Board policies, namely the Mass Emissions Strategy adopted by the SWRCB in 1990 in its Pollutant Policy Document which calls for reductions in the mass emissions of pollutants in water bodies where beneficial uses are degraded.

Constructing a valley-wide drain is not only bad water policy, it is also unnecessary. The San Joaquin Valley Drainage Program's 1990 Management Plan for Agricultural Subsurface Drainage found that in-valley options would provide adequate management of salts for fifty years or longer. The calculations presented in Appendix B of your August 1995 staff report on water quality objectives and compliance time schedule demonstrates that such alternatives to out-of-vallery export as source control measures, passive water table management, and land retirement can significantly reduce drainage discharges. Finally, if the effluent from the proposed drain had the reduced level of toxicants mandated by policy (f), then we believe there would be no reason for building a drain at all.

Compliance Schedule for Water Quality Objectives: While we are pleased that the Basin Plan amendments would tighten many of the numerical standards for selenium in the San Joaquin Basin, we believe that postponing mandated compliance with the standards for the San Joaquin River (which are only marginally different from the standards that should have been enforced in 1991) 10 or 15 years will not generate the swift improvements in water which are both possible and necessary. We believe that Potential Control Action 6 on page 26 should be rewritten with much earlier compliance dates (5 years or less) that reflect the San Joaquin River's history of poor water quality as well as the current availability of drainage management strategies which could generate rapid improvements. An assessment of drainage strategies in Appendix B of your August 1995 staff report on water quality objectives and compliance time schedule predicts that drainage effluent from the Grasslands watershed could be reduced to levels below those necessary to meet water quality objectives if a system of improved irrigation, passive water table management, and land retirement were implemented. The calculations presented there indicate that only 12% of the total tile-drained lands

in the watershed would be retired or dedicated to water table management--an amount that is slightly less than the amount of land within the entire watershed (drained or not) which is fallowed during a drought.

Implementation Measures: We welcome the adoption of the Waste Discharge Requirement as well as many of the other proposed changes to the implementation element of the Basin Plan, but we do have a number of specific concerns. We believe that the implementation plan must address the provision of Policy (e) on page 18 which states that "the San Joaquin River may continue to be used to remove these salts from the basin so long as water quality objectives are being met." Water quality objectives in the river are not being met at the present and the proposed load reductions to be contained within Waste Discharge Permits will not achieve compliance with water quality objectives for 10 or 15 years. The implementation plan must address this violation of Basin Plan policy.

Prohibition (c), which would ban discharge to Mud Slough and portions of the San Joaquin River unless an isolated conveyance facility is constructed to transport drainage below the confluence with the Merced River, should be eliminated. Further extension of the San Luis Drain accomplishes nothing other than to transport pollution problems further downstream. We also recommend adjusting the 8,000 lbs./year limit for selenium form the Grasslands (Prohibition (d), page 29) to at least match the 7,096 lbs./year limit which the draining parties have agreed to in their plan to use a portion of the San Luis Drain.

Finally, we believe that the implementation plan must make the penalties for non-compliance with the water quality objectives explicit. Control Action (1) related to the State Water Board states, "The Regional Board will request that the State Water Board use its water rights authority to preclude the supplying of water to specific lands, if water quality objectives are not met by the specified compliance dates and Regional Board administrative remedies fail to achieve compliance." We recommend that the language of this Control Action be changed to cause the Regional Board to request the withholding of water by the State Board if water quality objectives are not met regardless of the success or failure of Regional Board administrative remedies. We contend that if water quality objectives are not met by the compliance date that the Regional Board's administrative remedies have failed.

Thank you for providing us with this opportunity to comment on the proposed Basin Plan Amendments. If you have any questions regarding our comments, please call John Kopchik at (510) 335-1227.

Sincerely,

Harvey E. Bragdon
By Charles A. Zell

Harvey E. Bragdon
Director of Community Development

HB/JK
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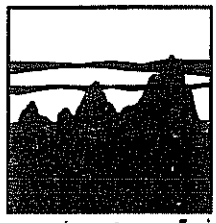

April 17, 1996

Karl Longley, Chairman and Board Members
Central Valley Regional Water Quality Control Board
3443 Routier Road suite A
Sacramento, CA 95827-3000
FAX (916)255 3015

RE: Basin Plan Amendment Addressing Agricultural Subsurface Drainage in the Grassland Watershed of the San Joaquin River Basin

Chairman Longley and Board Members:

Thank you for opportunity to comment on the Basin Plan Amendment. While I appreciate the complexity and difficulty of the problems facing you and your staff, I and recognize the hard work that has gone into the Basin Plan amendment, I nevertheless have some serious concerns:

General Comments

The staff report declares that in the 7 years since 1989, when the last Basin Plan was adopted, the selenium contamination picture of the San Joaquin River and its tributaries is worse today than it was then. Staff notes with what appears to be regret that the water conservation measures implemented during the drought and afterwards, reduced the surface runoff which had previously diluted some of the toxic selenium loads in agricultural drainage to the river. Thus the selenium levels are still at roughly the same horrendous levels as in 1989 i.e.: monthly mean concentrations exceeding 8ug/L in three out of 12 months downstream of the Merced River confluence with the San Joaquin. This continuing poisoning of public trust resources is a tragedy and a disgrace for San Joaquin River, the Central Valley as a whole and for the State of California. This destruction of public trust resources is the basis of the Public Trust Complaint, recently filed with the State Water Resources Control Board (SWRCB) by

(42)

Patagonia, Inc. a subsidiary of Lost Arrow Corporation
259 W. Santa Clara St. 93001 P.O. Box 150 Ventura, CA 93002 (805) 643-8616 TELEX 69-1729 FAX (805) 653-6355

Table 5 Prohibitions

a. The only agricultural drainage that will be prohibited will be NEW drainage. Dischargers already in place can continue to use the San Joaquin River and its tributaries as sewers under the agreement to reopen a portion of the San Luis Drain. There will be no improvement in San Joaquin salt loading for 5 years. After that, there are only water quality objectives and "GOALS" not enforceable standards. Another clear weakening.

b.The staff report claims that there will be a "prohibition" of drainage to Salt Slough and wetland water supply channels. This is a ruse. The "prohibition can be lifted, unless the drain is completed.

c. The same comment for the "prohibition" for agricultural sewage discharged to Mud Slough and the San Joaquin River from Sack Dam to the Merced River. Infusions of fresh water from the Merced will dilute the San Joaquin River, making up for the 98% flows taken by Friant Dam. There is no discussion of the unfairness of taking flows from the Merced, Tuolomne and Stanislaus to meet the standards at Vernalis, part of the complaint by Felix Smith.

d. The staff report recommends allowing the loading of 8,000 pounds a year of selenium to the San Joaquin River. This amount is 2,000 pounds MORE than the 6,000 pounds per year agreed to by the Bureau and the Delta Mendota Water Authority. I demand to know why the Regional Board is proposing even weaker requirements than the discharger has proposed?

Table 6. Proposed Changes in Control Actions

2. Why does the Regional Board not act NOW to secure compliance with the 2ug/L standard?

4. Why has the Upper Panoche Watershed been removed from consideration as being a high priority non-point source problem? It is still a disaster area.

Other Entities:

Why does the report make no mention of the program for the retirement of lands whose soils are loaded with toxic selenium?

Table 7. Proposed Changes to Cost Estimates

There is no explanation of why "wildlife areas" are removed from consideration for cleanup costs.

Table 8. Proposed Changes to Surveillance and Monitoring

Felix Smith. He is the retired fisheries biologist with the United States Fish and Wildlife Service (The Service) the hero of the Kesterson National Wildlife Refuge scandal.

Inadequate Selenium Standards for the San Joaquin River

The proposed Basin Plan amendment specifically excludes consideration of anything but selenium as a constituent problem for the Grasslands area . Meanwhile, the Regional Board currently has NO selenium standard. Staff now proposes to adopt the standard of 5ug/L, in the face of recent, validated, scientific data from the U.S. Fish and Wildlife Service, clearly showing that a standard of 2 to 5 ppb does not protect sensitive species. Concentration-based standards also do not take into account the bioaccumulative impacts of selenium proven by the devastation of wildlife at Kesterson. It is therefore your obligation under Porter Cologne to adopt the more restrictive standard of 2ppb to protect beneficial uses.

Table 4 Proposed Changes to the Policies

Most of these changes are consistent weakenings of former policies:

b. Staff recommends language which says: "Activities that increase the discharge of poor quality agricultural drainage will be DISCOURAGED" rather than prohibited - clearly a serious change, weakening already inadequate enforcement.

e. The staff report recommends agribusiness drainers continue to use of the pitiful remnant of the San Joaquin River to dilute selenium and other toxics. Worse the staff report says that this practice can continue "so long as water quality objectives are met". I protest this statement. The water quality objectives have not been met for over 12 years and it is disingenuous to mention meeting water quality objectives in light of the sorry enforcement record of the Central Valley Regional Water Quality Control Board.

f. The staff report reiterates the claim, previously made by the Regional Board, that the San Luis Drain is the best solution to the salt problem in the Central Valley but the report nowhere makes reference to other alternatives such as the program of land retirement for selenium laden soils. The report does not mention the fact that the Bureau is going forward with applications for a waste discharge permit for the San Luis Drain completion from the SWRCB. The Bureau, following the lead of the Regional Board staff, is making no reference as to where the drain is proposed to discharge. However, the Bureau is requesting the State Board to grant the Bureau a dilution zone and one can surmise that the Bay/Delta is still the discharge of choice for the Bureau and perhaps for the Regional Board?

The series of benign statements under this title only serve to underscore the general weakness of the Regional Board's approach to the serious and immediate pollution crisis in the san Joaquin River. In addition, since neither EPA nor USGS has yet signed off on the monitoring program proposed by the Bureau and the Delta Mendota Water Authority, there can be no clear public understanding of what the monitoring program is to consist of and who will oversee the historic lack of Regional Board enforcement.

I respectfully request that your board carefully review the proposed Basin Plan Amendment and rework it with your staff to create a document of which we can all be proud. In its present form, the staff report is a great disappointment to all who fought the Kesterson pollution and who care about restoration of public trust resources in what is left of the San Joaquin River.

Thank you.

SWRCB Chairwoman 1979-1982

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CENTERS FOR WATER AND WILDLAND RESOURCES
OFFICE OF THE ASSOCIATE DIRECTOR
RUBIDOUX HALL – 094

RIVERSIDE, CALIFORNIA 92521-0436
TELEPHONE: 909-787-4327
FACSIMILE: 909-787-5295
E-MAIL: letey@ucracl.ucr.edu

April 16, 1996

William H. Crooks, Executive Officer
Regional Water Quality Control Board
3443 Routier Rd., Suite A
Sacramento, CA 95827-3098

Dear Bill:

I have reviewed the draft staff report dated March 1996 on the "Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Agricultural Subsurface Drainage Discharges." The following are my comments on various aspects of the report.

A summary of developments since the State Water Board approved the existing basin plan amendment in 1989 are listed on pages 10 and 11. The first one states "although water conservation measures have been implemented, selenium loads are at the same level as in 1989." This statement is extended on page 5 of the executive summary. "Studies conducted for the Regional Board show that irrigation efficiency has improved in the drainage problem area. However, although selenium loads decreased by 66 percent between water year (WY) 1989 and WY 1992, they increased in WY 1993 and remained elevated in WY 1994. Selenium loads in WY 1994 were similar to those in WY 1989, when the Basin Plan amendment was adopted. The increase in load in WYs 1993 and 1994 occurred despite continuing increases in irrigation efficiency." One conclusion which can be drawn from these statements is that the selenium loads to the San Joaquin River are not well correlated with irrigation efficiency, at least as efficiency has been defined.

The attached figure illustrates the measured system losses of selenium between the monitoring sites south of the Grassland Water District and the monitoring sites located within mud and salt sloughs. This figure was taken from a report prepared by the U.S. Bureau of Reclamation relative to the Grassland Bypass Channel project. I note a correlation between the annual selenium in-transit losses and selenium loads to the San Joaquin River as quoted above. Specifically, there was a decrease in selenium loads between 1989 and 1992 and then an increase in 1993 and 1994. The selenium loads in 1994 were similar to those in 1989. One can observe from the figure that the selenium in-transit losses were similar in 1989 and 1994 and that there was the greatest amount of selenium losses in 1992 which represented the year with the least load.

One conclusion that might be drawn from these results is that reductions in selenium load to the San Joaquin River might best be accomplished by understanding and promoting the mechanisms which contribute to in-transit loses since they seem to be well correlated with the selenium loads to the

River. On the other hand, while improved irrigation practices undoubtably contribute to reduced selenium loads, they seem to have less impact.

Item 8 on page 11 of the report states "The need to consider agricultural water management on a watershed basis as proposed in the SJVDP Management Plan." This thought is repeated as a policy statement on page 82 "Optimizing protection of beneficial uses on a watershed basis will guide the development of actions to regulate agricultural subsurface drainage discharges." This consideration is enforced by the statement "those actions which lead to the greatest improvement in the watershed as a whole should be given priority."

The Grasslands watershed can be broadly categorized as containing agricultural lands and wetlands, therefore, to consider the watershed as a "whole" the coordinated management of agriculture and wetlands should be considered to optimize the protection and achievement of water quality goals in the San Joaquin River. The Porter-Cologne Water Quality Control Act specifies that development of water quality objective requires economic considerations. It is possible that the social net benefits might be higher if the costs were distributed in an optimal manner between the agricultural and wetland segments of the watershed. Furthermore, more reliable estimates on the costs, impacts, and benefits associated with various managements alternatives are needed.

I believe it is important to recognize what is known and what is not known. The following represents what I consider to be known and unknown.

Prior to Kesterson Reservoir, agricultural subsurface drainage waters were comingled with surface waters which were not only passed through the Grassland wetlands but also purposely used for creating wetlands and serving duck clubs, etc. The selenium loads entering and leaving the wetlands prior to entering the San Joaquin River are unknown and unfortunately will never be known. The impacts of using drainage waters in the wetlands on wildlife is unknown. However, to the extent damage to wildlife was occurring, it was not sufficiently great to be readily visible to those frequenting the wetlands.

With the advent of bird damage at Kesterson Reservoir, agricultural subsurface drainage waters were channelized through the Grassland wetlands and were no longer used as a water supply. It is known, based on the data presented in the figure, that flowing drainage water though the channel reduced the selenium load arriving at the San Joaquin River every year except for one. The disposition of the in-transit selenium losses is unknown. Impacts of flowing the drainage water through the channels on wildlife is also unknown. It is known that flowing the water through the channels had a positive effect on the water quality in the San Joaquin River during several years.

The present proposal gives absolute guaranteed protection to the wildlife in the Grasslands wetlands. Any protection to the San Joaquin River afforded by the Grassland wetlands for selenium remediation

is lost. Entire economic costs of protecting the San Joaquin River is placed on the agricultural community. The extent of these costs and the degree to which the San Joaquin River can be protected by agricultural management adjustments are both unknown.

Lest I be accused of being a defender of agriculture at the expense of the environment, I would point out that I consider the San Joaquin River and all water bodies into which the San Joaquin River flows as being extremely important. Indeed, protection of these waters is as important as protection of the Grassland wetlands. I am merely proposing that an entire system analysis leading to optimal protection of all waters as related to a beneficial agricultural activity should be considered.

Table 6 on pages 87-89 outline the proposed changes to control actions governing the regulations of agricultural subsurface drainage discharges into the San Joaquin Valley. The following is my reaction to some of them.

1. "In developing control actions for selenium, the Regional Board would utilize a priority system which focuses on a combination of sensitivity of the beneficial use to selenium and the environmental benefit expected from the action." I do not believe that the proposed action focuses on the combination of sensitivity of beneficial uses and the environmental benefit which can be definitely expected.

2. "Control action which results in selenium load reduction are most effective in meeting water quality objectives." I completely agree with this but the present plan ignores the opportunity for selenium load reduction by using the wetlands. Indeed, recent history suggests that load reductions in the wetlands are far more effective than load reductions which have been achieved by irrigation management. I do not suggest, however, that irrigation and drainage management should not be pursued to a greater extent than presently adopted.

3. "With the uncertainty in the effectiveness of each control action, the regulatory program will be conducted as a series of short-term actions that are designed to meet long-term water quality objectives." I do not believe the proposal is consistent with this statement.

9. "Public and private managed-wetlands will participate in the program to achieve water quality objectives." This item appears to be completely ignored in the proposal.

In conclusion, the Board had an extremely difficult and complex task to develop a water quality control plan to protect the Sacramento River and San Joaquin River basins. The task is greatly enlarged by the inadequacy of reliable scientific and economic analysis upon which to make recommendations. The crux of the matter is that the proposed amendments give a one hundred percent guaranteed protection to wildlife in the Grassland wetlands without adequate documentation on the impacts of alternative management plans. The entire environmental system, not only the

Grassland wetlands, deserves protection. All water bodies should share in the benefits and costs associated with unavoidable water quality degradation.

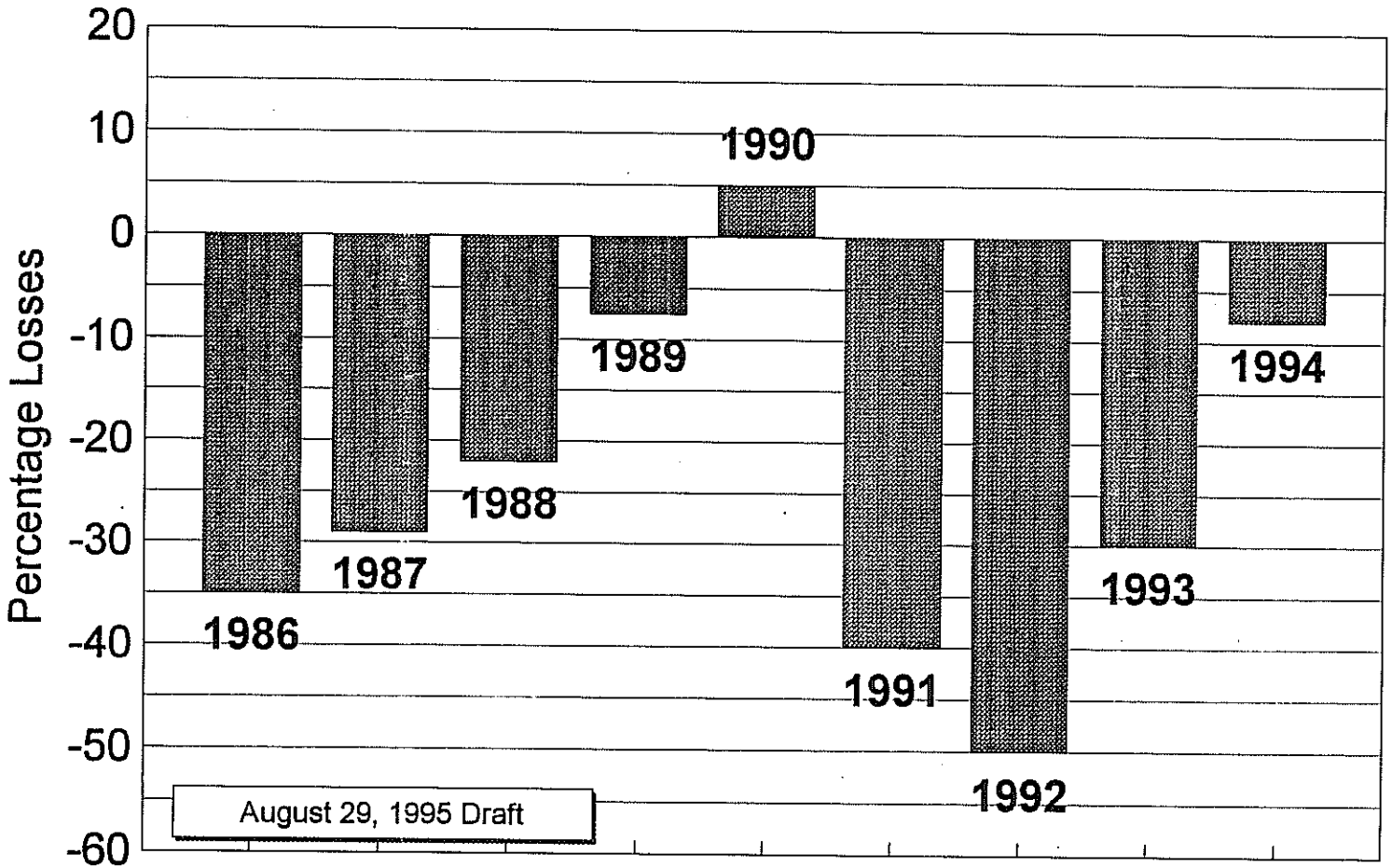
I seriously request that the Board give further consideration before adopting the proposed amendments. I should also point out that even though I am a faculty member of the University of California, all of the opinions expresses are personal opinions and do not represent an official University of California position.

Sincerely yours,

J. Letey
Associate Director

Enclosure

Year to Year Variation in Se In-Transit Losses



The Bay Institute of San Francisco

April 17, 1996

Karl E. Longley, Chair
Central Valley Regional Water Quality Control Board
3443 Routier Road, Suite A
Sacramento, Ca. 95827-3098

RE: BASIN PLAN AMENDMENTS FOR THE CONTROL OF AGRICULTURAL SUBSURFACE DRAINAGE DICHARGES

Dear Mr. Longley,

This letter is submitted as the comments of The Bay Institute of San Francisco, the Environmental Defense Fund (EDF), and the Natural Resources Defense Council (NRDC) on the March 1996 draft amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the control of agricultural subsurface drainage discharges.

The Bay Institute, EDF, and NRDC support the following elements of the draft amendments to the Basin Plan:

1. Policies and control actions that focus on selenium load reduction as the preferred approach for regulating selenium discharges.

We agree that load reductions are the appropriate mechanism for assuring compliance with water quality standards for the following reasons:

- load reductions are required to implement federal Clean Water Act requirements for a Total Maximum Daily Load on this segment of the San Joaquin River;

51

625 Grand Avenue, Suite 250 San Rafael, CA 94901 (415) 721-7680
Fax (415) 721-7497

- load reductions are necessary to protect against adverse environmental effects downstream of the discharge point due to bioaccumulation, in addition to achieving the concentration-based water quality standard.

2. Prohibition of discharge and issuance of waste discharge requirements with enforceable effluent load limits to achieve load reductions.

The Basin Plan amendments properly identify prohibition of discharge and issuance of waste discharge requirements with enforceable effluent load limits based on total maximum daily load calculations as essential elements for regulation of agricultural subsurface drainage. In addition to ensuring adequate protection of beneficial uses, explicit limitations also provide dischargers with certainty regarding allowable discharges.

As noted below, we continue to be concerned about the 10 -15 year time schedule for compliance with water quality objectives through phased load reductions enforced in the WDRs. We are also concerned that the wet year load calculations may overestimate the assimilative capacity of receiving waters for a trace element with bioaccumulative properties.

3. Promotion of economic incentives to control drainage discharges.

We agree that economic incentives can provide an equitable, cost-effective and environmentally protective method for reducing drainage discharges, in conjunction with other measures.

The Bay Institute, EDF, and NRDC oppose the following draft amendments to the Basin Plan:

1. Establishment of a 10 - 15 year schedule for compliance with water quality standards in Mud Slough (north) and the San Joaquin River.

The 10 - 15 year compliance schedule will allow for serious long-term degradation of water quality in Mud Slough (north) and the San Joaquin River, in violation of federal and state antidegradation requirements. A shorter compliance schedule is consistent with national implementation of federal Clean Water Act discharge requirements and is feasible using currently available technologies and management strategies. Not only should regulatory requirements drive the development of compliance mechanisms, but in this case

necessary selenium load reductions can be met now with available solutions in all but the driest years. We therefore urge the Board to adopt a more timely schedule for compliance (e.g., no longer than the 5 - 7 year period identified in Alternative 4).

2. Use of 5 part per billion (ppb) and 8 ppb monthly mean performance goals.

These "performance goals" are not adequate as implementation measures during the period leading to full compliance with water quality objectives. The 5 ppb and 8 ppb monthly mean performance goals are scientifically unjustified because they do not prevent chronic toxicity and therefore fail to provide adequate protection to beneficial uses. As a result, the U.S. Environmental Protection Agency disapproved their adoption as Basin Plan objectives. They are also unnecessary as performance goals; the load reductions to be specified in enforceable effluent limits provide a better measure of progress toward compliance. We also continue to recommend adoption of a 2 ppb water quality objective for selenium as necessary to prevent degradation of beneficial uses from bioaccumulation effects. This objective should apply, at a minimum, to all waters that may be used to supply wetland areas.

3. Omission of appropriate beneficial use designations for Mud Slough (north), Salt Slough, and the Grassland wetland channels.

BIOL should be identified for Mud Slough (north) because of periodic inundation of adjacent protected state and federal wildlife areas by the waters of Mud Slough. COLD, MIGR, and SPWN (cold) should be identified as potential uses of Mud Slough (north) and Salt Slough because of potential changes in habitat quality as a result of reoperation of Friant Dam under the Central Valley Project Improvement Act and/or under the upcoming State Water Resources Control Board (SWRCB) water rights decision to implement the 1995 Water Quality Control Plan for the San Francisco Bay-Delta estuary. RARE should be identified for all sections of the Grasslands watershed because of the presence of threatened and endangered plant and animal species, including the federally protected Aleutian Canada goose.

4. Policies that promote out-of-valley export of agricultural subsurface drainage.

Policies e and f should be deleted as inconsistent with the findings of the SWRCB's 1990 Pollutant Policy Document for the Bay-Delta estuary that reductions in the mass emissions of pollutants must occur in water bodies where

beneficial uses are degraded, and with the findings of the San Joaquin Valley Drainage Program's 1990 Management Plan for Agricultural Subsurface Drainage that economicaly or environmentally feasible options for export do not exist at the present time, and that in-valley options would provide adequate management of salts and other drainage constituents for fifty years or longer.

*

The comments above summarize many of our major concerns regarding the draft Basin Plan amendments. These and related concerns, most of which are still relevant, have been more fully discussed in comments previously submitted to the Board. Accordingly, we wish to incorporate the following documents by reference: the December 8, 1994, comments of EDF regarding previous Basin Plan amendments; the July 6, 1995, comments of The Bay Institute, EDF, and NRDC regarding the beneficial uses and water quality criteria; the October 2, 1995, comments of The Bay Institute regarding the water quality objectives and implementation plan; the October 4, 1995, comments of EDF regarding the water quality objectives and implementation plan; and the December 7, 1995, comments of The Bay Institute, EDF, and NRDC regarding the compliance time schedule.

Sincerely,

Gary Bobker
The Bay Institute of San Francisco

Terry F. Young, Ph.D.
Environmental Defense Fund

Hal Candee
Natural Resources Defense Council

State of California

Memorandum

To : Rudy J. Schnagl, Chief
Agricultural Unit
California Regional Water Quality
Control Board - Central Valley Region
3443 Routier Road, Suite A
Sacramento, California 95827-3098

Date : April 18, 1996

Place :

From : **Department of Pesticide Regulation** - 1020 N Street, Room 161
Sacramento, California 95814-5624

Subject : COMMENTS ON AMENDMENTS TO BASIN PLAN

Thank you for the opportunity to comment on the proposed Basin Plan amendment addressing agricultural subsurface drainage in the Grassland watershed as presented in the March 1996 draft staff report. Below are suggested revisions to the proposed amendment and rationale for such revisions.

Suggested Revisions to Implementation Chapter

Page 26, Regional Water Board Prohibitions, Paragraph 6, "San Joaquin River Subsurface Agricultural Drainage." Subparagraphs b. and c. should be revised to read "...unless water quality objectives *for selenium* are being met...."

Page 27, Subsurface Agricultural Drainage, Paragraph 1. The text should be revised to read "...if water quality objectives *for selenium* are not met...."

Page 30, Agricultural Drainage Discharges in the San Joaquin River Basin, Paragraph 7. The text should be revised to read "...will be applied to the discharge of *selenium with* subsurface drainage water from the Grassland watershed...," and, "...equal to the receiving water objectives *for selenium* to ensure that beneficial uses are protected...."

IRNAME

Rationale

Clearly the goal of these amendments is the control of selenium discharges, as stated in the Introduction and Background section (page 1). In fact, that section suggests that other problem toxicants (i.e., boron and salt) will be addressed in a subsequent amendment. The project description provided in the California Environmental Quality Act Review section (page 109) also makes it clear that this action focuses on selenium. The only water quality objective to be changed with these amendments is the selenium objective. Therefore, proposed changes in the implementation chapter should be specific to selenium as well.

Our concern is that without this specificity the Regional Board may be compelled to prohibit discharges of water in which water quality objectives for pesticides are exceeded. We maintain that the process outlined in the draft Management Agency Agreement between the Department of Pesticide Regulation and the State Water Resources Control Board and its companion document, the Pesticide Management Plan, provides a more consistent and efficient method for addressing such discharges.

Thank you for your consideration. If you have any questions on these comments, please contact Marshall Lee, of my staff, at (916) 324-4269.

John S. Sanders

John S. Sanders, Chief
Environmental Monitoring and
Pest Management Branch
(916) 324-4100

Center for Marine Conservation

April 16, 1996

Board Members
Central Valley RWQCB
c/o William H. Crooks, Exec. Officer
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

VIA FACSIMILE AND U.S. MAIL

Re: Comments on the Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (May 3, 1996 Meeting)

Dear Board Members:

The Center for Marine Conservation (CMC) is a national, nonprofit citizens organization dedicated to the conservation of marine species and their habitats. CMC has over 20,000 members in the state of California alone. CMC welcomes this opportunity to comment on the proposed Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan).

CMC strongly objects to the Regional Board's policy of encouraging the export of agricultural, municipal, industrial and other wastewater out of the region and into San Francisco Bay or the ocean. See Table 4, page 12 of the Executive Summary to the draft report, "Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins" (March 1996) (Report).

In particular, CMC objects to the recommendation that the region's long-term wastewater management plan should consist of a "valley-wide drain to carry . . . wastewater high in salt and unfit for reuse that is generated by municipal, industrial, agricultural, and wetland management activities." Report at 12. Though the Report does not mention the ultimate destination of this wastewater, the Tulare Lake Basin Staff Report dated August 17, 1995 (Staff Report) describes the destination of this wastewater tunnel as the "Bay-Delta area." Staff Report at 57.

It has been proposed regularly over the years to send Central Valley wastewater to the ocean, either in or adjacent to the Monterey Bay or Gulf of the Farallones National Marine Sanctuaries. CMC, other environmental groups, representatives of the fishing industry, and affected neighborhood groups have been committed to protecting our valuable coastal and ocean resources from this misguided "wastewater superhighway."

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Pacific Regional Office: 580 Market Street, Suite 550 San Francisco, CA 94104 (415) 391-6204 Fax (415) 956-7441
National Headquarters: 1725 DeSales Street, NW, Ste. 500 Washington, D.C. 20036 (202) 429-5609 Fax (202) 872-0619

CMC thus urges the Regional Board to:

- abandon its long-range policy of dealing with local wastewater problems by simply sending them elsewhere, and
- focus instead on investigating and maximizing in-Valley solutions to local salinity and wastewater issues.

If you have any questions regarding these comments, please do not hesitate to call. Thank you.

Sincerely,

Linda M. Sheehan
Pollution Programs Manager

cc: Rudy Schnagl, Central Valley RWQCB

58

842 Sixth Street, Suite 7
P.O. Box 2157
Los Banos, CA 93635

April 17, 1996

Mr. Bill Crooks, Executive Director
California Regional Water Quality Control Board
For the Central Valley Region
3443 Routier Road, Suite A
Sacramento, California 95827-3098

Dear Bill,

Enclosed are comments prepared by the San Luis & Delta-Mendota Water Authority, pertaining to the March 1996 Staff Report on the "Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the Control of Agricultural Subsurface Drainage Discharges."

The comments include General Information describing current efforts underway in the Grassland Basin to reduce subsurface drain water volume and selenium loads, comments regarding specific changes in the Basin Plan Amendment, and comments regarding the Staff Report. As you know, the Basin Plan Amendment and the Staff Report are substantive documents containing a large amount of important information. Our goal, in the limited time available, has been to recommend specific changes in the Basin Plan Amendment, while addressing key issues in the Staff Report. There are additional issues in the Staff Report that we would like to address at a later date, as time permits. In addition, we would appreciate an opportunity to describe, in greater detail, the expected economic impacts of the proposed changes in water quality objectives.

The Staff Report includes discussion of a TMDL program to regulate the discharge of selenium in agricultural subsurface drain water. As you know, a TMDL program

can be very restrictive in a river system such as the San Joaquin, where flow rates vary widely within years, and over time. The Grassland Basin Drainers are working with state and federal agencies to develop a Real-Time Monitoring program to manage water quality in the San Joaquin River, while maintaining salt balance in the region. We would greatly appreciate your help in communicating our long-term goals and programs to EPA, as you submit your TMDL program for their review.

Thank you very much for the opportunity to provide comments on the Staff Report and the Basin Plan Amendment. Please let me know if any additional information would be helpful at this time.

Sincerely,

Dennis Wichelns
Drainage Coordinator

(10)

Comments Regarding

Amendments to the Water Quality Control Plan For the Sacramento River and San Joaquin River Basins for the Control of Agricultural Subsurface Drainage Discharges

Draft Staff Report, March 1996

Prepared by the
San Luis & Delta-Mendota
Water Authority

April 17, 1996

These comments pertain to the Staff Report on "Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, for the Control of Agricultural Subsurface Drainage Discharges." That Report was prepared by the California Regional Water Quality Control Board for the Central Valley Region.

(19)

Comments from the San Luis & Delta-Mendota Water Authority Regarding "Amendments to the Water Quality Control Plan For the Sacramento River and San Joaquin River Basins For The Control of Agricultural Subsurface Drainage Discharges"

Outline

I. General Information

II. Comments on Changes in the Basin Plan Amendment, As Presented in the Executive Summary

III. Comments on the Staff Report

I. General Information

1. Seven irrigation and drainage districts have formed an Activity Agreement within the San Luis & Delta-Mendota Water Authority, for the purpose of designing and implementing solutions to irrigation and drainage issues in the Grassland Basin, within the San Joaquin Valley. These districts, also known as the Grassland Area Farmers, include the Broadview Water District, Camp-13 Drainage Association, Charleston Drainage District, Firebaugh Canal Water District, Pacheco Water District, Panoche Drainage District, and Widren Water District. The total irrigated area within these district is about 97,400 acres.

2. We would like to include, by reference, all of the comments and reports we have submitted to the Regional Board regarding this topic in recent years. Comments include those submitted on July 6, 1995, October 4, 1995, December 11, 1995. We also submitted a report describing the potential economic impacts of water quality regulations, dated October 18, 1995.

3. We appreciate the Regional Board's recognition of the "Consensus Letter" dated November 3, 1995, and signed by representatives of the San Luis & Delta-Mendota Water Authority, the U.S. Bureau of Reclamation, the U.S. Environmental Protection Agency, and the U.S. Fish and Wildlife Service.

4. Irrigation and drainage districts in the Grassland Area have already begun implementing activities and policies to increase the awareness of water quality issues in the region and to achieve further reductions in drain water volume and selenium loads. For example, the Grassland Basin Drainage Activity has been formed as an Activity Agreement within the San Luis & Mendota-Water Authority and a Regional Drainage Coordinator has been hired to assist member districts in designing and implementing appropriate policies and programs.

5. Several workshops have already been conducted in 1996 to inform farmers about the regional drainage management effort and to enlist their support in reducing deep percolation and drain water volume. The Drainage Coordinator has also been working very closely with District staff to develop policies and strategies that will increase the probability of achieving the selenium load targets in the Use Agreement for the Wetlands Bypass.

6. The annual selenium load targets for the first year of the Use Agreement represent a 15% reduction from the nine-year average of selenium loads measured in Mud and Salt Slough during 1986 through 1994. However, the proportional reduction in selenium loads required at District outlets to achieve the Use Agreement load targets is much greater than 15% for two reasons: 1) We believe that as much as 15% of the selenium load previously discharged through Grassland channels was assimilated or volatilized in that area, before reaching the San Joaquin River; and 2) Selenium loads have

increased in 1994 and 1995, due to higher rainfall, greater water deliveries, and an increase in planted area. As a result, we estimate that the load of selenium discharged from District outlets must be reduced by 50% from the load discharged in 1995, to achieve the Use Agreement load targets for 1996.

7. Many farmers in the Grassland Basin are currently implementing improvements in irrigation practices to reduce deep percolation and drain water volume. Some farmers are using sprinklers, rather than surface methods, for pre-irrigating cotton and melon fields, while other farmers are using sprinklers for early irrigations on tomatoes and cotton. Historically, most farmers used surface methods for these events, resulting in relatively large volumes of drain water and selenium loads. Sprinklers are more expensive than surface methods, but many farmers are voluntarily incurring these higher costs, to improve water quality in the region.

8. Several irrigation districts in the Grassland Basin have already implemented innovative economic incentives to encourage farm-level improvements in water management practices. These programs include tiered water pricing, water marketing, and low-interest loans for the purchase of higher technology irrigation systems. Districts will continue to evaluate alternative incentive programs to seek the best combination of economic incentives and district-level policies that complement farm-level efforts to improve water management.

II. Comments on Changes in the Basin Plan Amendment, As Presented in the Executive Summary

1. Page 1. The first paragraph introduces the proposed Basin Plan Amendment. To correctly establish the focal point, **the Water Authority recommends adding to the end of the first paragraph, "in a portion of the San Joaquin River watershed described as the Grassland Watershed."**

(64)

2. Page 1. The final paragraph on page 1 describes this Amendment's focus on selenium in the proposed Amendment. **The Water Authority strongly supports the narrow focus on selenium.**

3. Page 2. Regional Board Staff are proposing to submit a TMDL program to EPA. We understand the requirement for this action. However, EPA is a signatory to the Consensus Letter, indicating that a modified TMML is acceptable as an interim measure. Please note that the parties who have signed the Consensus Letter did not reach agreement on the appropriateness of a TMML program for establishing long-term objectives. **We recommend that the Basin Plan Amendment recognize that the TMDL approach does not have consensus, and that the plan should be reviewed in the future.**

4. Page 3. The second paragraph in this section describes the Grassland Watershed, as identified in Figure 1. **The Water Authority recommends that the second paragraph contain a sentence indicating that Figure 1 also shows the Drainage Problem Area, which is the term used in the Basin Plan Amendment.**

5. Page 9, Table 1. The second paragraph of the description describes the hydrology of the watershed. **The Water Authority recommends that the paragraph be modified to note that the alteration of hydrology has occurred <u>outside the watershed and within the watershed</u>, and that the water bodies in the area are primarily effluent-dominated streams. The paragraph should also acknowledge that salts and selenium are continuously brought into the area by natural flooding and rainfall events, in addition to irrigation.**

6. Page 11, Table 3. Proposed Selenium Water Quality Objectives. The staff proposed adoption of the EPA promulgated objectives. This was recommended in the "Consensus Letter". It should be noted that the "Consensus Letter" indicates a commitment by the signatory parties to participate in a cooperative review process by which to evaluate any new scientific information relevant to the subject (page 3 of letter). **It is recommended that the Basin Plan acknowledge this review process.**

(65)

7. Page 12, Table 4, Item f. This section summarized proposed changes to a policy acknowledging the need for a Valley-wide drain. **The Water Authority strongly supports the Regional Board in the policy that a Valley-wide drain remains the best technical solution to water quality problems of the San Joaquin River.**

8. Page 12, Table 4, Item f. A new sentence has been added, indicating that a Valley-wide drain would carry wastewater generated by municipal and industrial activities, in addition to agricultural drain water. This statement suggests a vastly different type of drainage requirement than any that has been discussed in previous workshops. The issues that would need to be addressed are very different than those examined for agricultural drain water, and there is not sufficient analysis to suggest that such a drainage need is required.

   It is also not clear that there is a need, nor any justification, for providing drainage to wetland habitats, through a Valley-wide drain. The San Luis Act, which is the only legislation presently authorizing construction of a drain, contains no provision for such use. **The Water Authority strongly recommends that the references to drainage for municipal, industrial, and wetland management activities be deleted, or at least that the item be re-worded to indicate that such a drain might, but is not required to, convey non-agricultural drainage.**

9. Page 12, Table 4, Item f. The statement of conditions under which the Regional Board would support construction of a Valley-wide drain includes a condition that the discharge be regulated by an NPDES permit. The Regional Board has indicated that an NPDES permit is not applicable for the discharge proposed for the Grassland Bypass Channel Project. The Water Authority strongly recommends that the condition be changed to read... "**The discharge would be governed by specific discharge and receiving water limits in an appropriate permit.**"

10. Page 12, Table 4, Item h. A new sentence has been added indicating that for selenium discharges, actions need to be focused on selenium load reductions. The Consensus Letter indicates that interim actions for selenium reductions need to be focused on loads, but there is no consensus that load regulations are appropriate in the long-term. Continuing to restrict selenium loads in all water year types, even when water quality objectives are achieved, will remove an important tool for achieving salt balance. In fact, it may be possible to maintain water quality objectives in the San Joaquin River with a policy focus on selenium concentrations at selected monitoring sites. This will greatly reduce the economic impacts of water quality objectives, while protecting beneficial uses of water. Signatories to the Consensus Letter have made a commitment to review the appropriateness of load regulations, before accepting this approach as a long-term policy option.

    The Water Authority recommends that a phrase be added at the end of the sentence: "on an interim basis, until objectives are achieved." We also recommend a second sentence for this item: "In the long-term, it may be possible to achieve water quality objectives by focusing on selenium concentrations at selected compliance sites."

11. Page 13, Table 5. Items b and c address the possibility that public or private interests may prevent the construction or use of conveyance facilities for agricultural subsurface drain water. **The Water Authority strongly supports these statements and we agree that the prohibition of the discharge of agricultural subsurface drain water to the water bodies described therein should be reconsidered if public or private interests prevent the construction or use of a separate conveyance facility for agricultural subsurface drain water.**

12. Page 13, Table 5, Item d. This item describes a maximum discharge of 8,000 pounds of selenium per year, for all water year types beginning October 1, 1996. This is in conformance with the Consensus Letter. The intent of the Use Agreement with the USBR was for the load limitations to start when the drainage water first flowed in the drain (Use Agreement, page 15, Item V.A.). It was originally anticipated that the Grassland Bypass project would be in

operation by October 1, 1995. Due to delays beyond the control of the Water Authority this has not occurred. **The Water Authority supports the wording of Item d in Table 5. However, it should also be noted the 8,000-pound load limit for selenium should apply only during the course of the Use Agreement, or until water quality objectives are achieved.**

13. Page 13, Table 5, Item d. This goal of this statement is to restrict the total selenium load discharged from agricultural drainage systems to no more than 8,000 pounds per year. We would like to clarify that this load limit applies to selenium loads discharged to the San Joaquin River, rather than the total load collected in drainage systems. **The Water Authority recommends that this Item be modified as: "The discharge of selenium from agricultural subsurface drainage systems in the Grassland Watershed to the San Joaquin River is prohibited in amounts exceeding 8,000 pounds per year for all water year types beginning 1 October 1996.**

14. Page 14, Table 6. The issue of agricultural subsurface drain water is extremely complex and its regulation has widespread economic ramifications. **In general, the Water Authority supports the proposed revisions to Table 6, Actions Recommended for Implementation by Other Agencies.**

15. Page 14, Table 6, Item 1. Item 1 is a recommendation that the State Board use its water rights power to prohibit delivery of water to certain lands if water quality objectives are not met. The possibility of withholding irrigation water from agricultural lands should be considered only as a policy of last resort. Exercise of such power would essentially cause a complete devaluation of the land from which the water is removed, even though the particular landowners may be doing everything within their power to use water beneficially and to minimize drain water volume.

    The relationship between irrigation water deliveries and subsurface drain water volume is very complex and is not yet completely understood. Irrigation and drainage on the west side of the San Joaquin Valley are certainly influenced by changes in the San Joaquin River system caused by dams on the east side of the Valley and the exchange of water rights. In addition, scientific information describing the potential impacts of selenium

in the San Joaquin River and its tributaries is very limited and does not support such a drastic measure as withholding water deliveries from the region.

The Water Authority strongly recommends that the final sentence be modified to read... "The Regional Board will request that the State Water Board use its water rights authority to preclude the supplying of water to specific lands, if water quality objectives are not met by the specified compliance dates, no proceedings are pending to modify the objectives or the compliance dates, Regional Board administrative remedies fail to achieve compliance, and the Regional Board has determined that, as a last resort, exercise of such authority is required."

16. Page 14, Table 6, Actions for Implementation by Other Agencies. Item 1 states that entities in the Grasslands watershed need to form a regional drainage management entity. This has been done. Therefore, the amendments should state: **The Grassland Basin Drainage Management Activity Agreement formed within the San Luis and & Delta-Mendota Water Authority is such an entity.**

17. Page 15, Table 6, Other Entities, Item 5. This Item recommends that the San Joaquin Valley Drainage Implementation Program continue to investigate the alternative of a Valley-wide drain. There are serious questions regarding the accomplishments and continued funding of the San Joaquin Valley Drainage Implementation Program. We believe that encouragement of the alternative of the valley-wide drain should not be limited to that program. **The Water Authority recommends that this Item be amended to read... "The San Joaquin Valley Drainage Implementation Program or other appropriate agencies should continue...."**

18. Page 15, Table 6, Actions and Schedule to Achieve Water Quality Objectives, Item 2. This Item states that control actions resulting in load reductions are the most effective for meeting water quality objectives for selenium. As discussed in item 10, above, load reduction targets should be viewed only as

interim measures for achieving water quality objectives. **The Water Authority recommends adding at the end of Item 2, the following: "Once objectives are achieved, control actions may focus on concentrations."**

19. Page 15, Table 6, Actions and Schedule to Achieve Water Quality Objectives, Original Item 4. This Item, which is proposed to be deleted, states that best management practices are applicable to the control of agricultural subsurface drainage. While best management practices have not been completely effective in achieving water quality objectives, they remain critical tools that can be used in conjunction with load reduction targets described in waste discharge permits. **The Water Authority strongly recommends that the sentence describing best management practices not be omitted.**

20. Page 15, Table 6, Other Entities, Item 6. **The Water Authority supports the proposed wording in Item 6 that apportions responsibility for drainage management in the Grassland basin to other agencies.** There are statewide benefits to be derived by solving local wetland problems. Agriculture has historically provided a water supply for wetland areas, but we are presently working to re-route agricultural drainage water around those areas, to improve water quality in wetland supply channels.

21. Page 16, Table 6, (Table IV-4 of Basin Plan). This table presents the Selenium Water Quality Objectives and Compliance Time Schedule. Regional Board Staff is proposing a 10-year time schedule to achieve the EPA water quality objective for selenium in the San Joaquin River during normal and wet years, and a 15-year time schedule to achieve the selenium objective in dry years. We understand the requirement that the Regional Board must provide a compliance schedule for achieving the EPA water quality objective for selenium. However, the direct and indirect costs of achieving that objective have not been considered sufficiently in selecting the compliance time schedule. **We strongly recommended that at a minimum, the Basin Plan Amendment should state that the compliance time schedule is subject to review and revision, after further consideration of pertinent economic data.**

22. Page 16, Table 6, Item 5. Boron standards are said to be in effect for agricultural purposes. If these are not now being met, there needs to be clarification that a future Basin Plan Amendment will address them. **The Water Authority recommends a footnote in this Item indicating that a compliance schedule for boron will be forthcoming in a future basin plan amendment.**

23. Page 17, Table 6, Item 6b. This Item states that selenium load milestones will be incorporated into waste discharge requirements to ensure that requirements for the implementation of a Total Maximum Daily Load (TMDL) program are satisfied. The Environmental Protection Agency has signed the consensus letter that recommends selenium load targets that are not based strictly on a TMDL program, for use during the interim period. EPA has suggested that a TMDL program may provide a long-term method for achieving water quality objectives, but the signatories to the Consensus Letter did not achieve consensus on that point (Please see Page 4, Item 6 of the Consensus Letter). **The Water Authority supports the current language in this Item, only upon the understanding that the Consensus Letter load targets will satisfy Clean Water Act TMDL requirements for the interim period of the Use Agreement, and that there will be opportunities for further input regarding the use of a TMDL program on a long-term basis.**

24. Page 17, Table 7, Item 7. In the Consensus Letter, the Water Authority agreed that effluent limits should be established in a waste discharge permit to control discharges of selenium in subsurface drain water. It is possible that a first-tier control action of best management practices will be appropriate for other constituents. **The Water Authority recommends that Item 7 be modified to read..."Effluent limits for selenium established in waste discharge requirements...."**

25. Page 18, Table 7. The economic information presented in this Table is not documented clearly and, therefore, we are not able to determine if the estimated costs are accurate. We believe the lower-bound estimate of $3.6 million per year comes from the EDF report, as cited in the Regional Board Staff Report, but we are not able to locate this particular cost, or the per-acre cost equivalent value.

Current estimates of annual irrigation costs (including fixed costs and variable costs) range from $138 per acre when using traditional siphon tubes on alfalfa seed, to $371 per acre when using gated pipe and sprinklers on processing tomatoes (please see our Table 1, below). As shown in the Table, the estimated increase in the annual cost of irrigating cotton rises by $34 per acre when farmers replace traditional siphon tubes (1/2-mile furrow lengths) with improved siphon tubes (1/4-mile furrow lengths for cotton and alfalfa seed; 1/6-mile furrows for melons and tomatoes). Most farmers in the Grassland Basin have already implemented this improvement.

Table 1. Estimated Annual Costs of Irrigating Selected Crops in the Grassland Basin, 1996

	Cotton	Melons	Processing Tomatoes	Alfalfa Seed
Siphon Tubes		(Dollars per Acre)		
Traditional	186	151	176	138
Improved	220	165	210	151
Gated Pipe	288	237	280	209
Sprinklers and Siphon Tubes	263	207	308	190
Sprinklers and Gated Pipe	318	265	371	237
Sprinklers	344	n/a	n/a	n/a

Notes: Estimated costs include amortized capital costs, maintenance costs, and the costs of labor, water, and energy.

It is not feasible to use siphon tubes, alone, for the complete season on melons, tomatoes, or alfalfa seed.

Source: Wichelns, D., L. Houston, D. Cone, Q. Zhu, and J. Wilen, "Labor Costs May Offset Water Savings of Sprinkler Systems," California Agriculture, 50:11-18 (Table 4).

The estimated incremental cost of using sprinklers, in sequence with improved siphon tubes, ranges from $39 to $43 per acre per year for the four crops shown in Table 1. The estimated cost of using siphon tubes for all irrigation events on cotton is $344 per acre per year, or $124 per acre greater than the cost of using improved siphon tubes. It may be necessary to incur these higher costs to achieve necessary reductions in selenium loads.

We have estimated the investments and expenditures that may be required to achieve water quality objectives for three scenarios representing different combinations of selenium load and concentration objectives that pertain to the Compliance Time Schedule in Table 6 (Page 16) of the Executive Summary. The estimated present value of the sum of expenditures and investments required to achieve the selenium load reductions implied by that Schedule is $211.7 million, or $2,183 per acre. [Please see our December 1995 Comments to the Regional Board for the detailed analysis.] As we noted in those Comments, farmland that is valued at $2,000 per acre cannot support a present value of expenditures and investments of $2,138 per acre. Therefore, it is imperative that we develop an alternative approach to achieving water quality goals in the region, if we are to maintain a viable agricultural community.

III. Comments on the Staff Report

The Water Authority has reviewed the Staff Report dated March 1996 and offers the following comments and suggestions. There are many items in the Staff Report that we would like to address in greater detail, and many items that are not discussed in this transmittal. Time constraints in preparing specific comments regarding the Basin Plan Amendment for the Regional Board Hearing on May 3 have required us to limit our comments on the Staff Report to several key issues. We would appreciate the opportunity to discuss these and other issues in greater detail, in the near future.

1. Page 76, Comparison of Alternatives. The matrix of scores presented in Table 5 is used to evaluate alternative policies and compliance time schedules. We believe it is more difficult to assign comparative scores to Alternatives 2 and 3 than the procedure described in the Table suggests. For example, Staff has assigned a score of 0 to the "Degree of impairment that would occur during the period of non-compliance" to Alternative 2 and a score of 3 for this criterion in Alternative 3. This implies that there would be "high impairment" if the compliance time schedule is 25 years and moderate impairment if the compliance time schedule is 15 years.

   We are not aware of any evidence that supports the assignment of these scores to these Alternatives. In fact, it is reasonable to assume that with appropriate performance goals in place, the degree of impairment may be very similar in the two scenarios. Furthermore, given the large amount of uncertainty regarding the possible impacts of selenium in the San Joaquin River, and the relatively good information describing the potential costs of imposing severe load restrictions, it may be <u>socially optimal</u> to choose the longer compliance time schedule. Otherwise, the state may impose large and unnecessary economic damages, while not providing any additional protection of beneficial uses.

2. Page 77, Recommended Alternative. The Regional Board Staff is recommending Alternative 3 because it "provides a balance between the economic cost, likelihood of success, and period of non-compliance." The text suggests that Staff has compared the environmental costs of an extended period of non-

compliance with the economic costs of achieving water quality objectives. However, it is not possible, with existing information, to examine the environmental costs of non-compliance because there is no evidence suggesting that current or expected concentrations of selenium are causing any environmental problems in the San Joaquin River.

It may be true that the EPA national water criterion for selenium has not been achieved in the San Joaquin River on a continuous basis. However, it is not possible to quantify the cost of non-compliance, or to determine if the environmental cost of non-compliance with the EPA standard is greater than the cost of implementing measures to achieve that compliance.

Water quality conditions in the San Joaquin River have actually been very close to the objectives described by the Regional Board in its earlier work on this subject, during most months of the recent eight years. In fact, there were only 4 exceedances of the 5-ppb monthly mean selenium concentration objective for selenium in 20 months of Above Normal or Wet Years during 1988 through mid-1995. There were only 17 exceedances of the 8-ppb monthly mean selenium concentration objective during the 72 months of Below Normal, Critical, or Dry Years during the same period. In 15 of those 17 cases, the monthly mean selenium concentration was less than 12 µg/l, and in the remaining two cases of exceedance, the mean monthly mean concentration was less than 14 µg/l. [Please see our December 1995 Comments to the Regional Board, where we present these data in greater detail.]

The Water Authority has prepared and submitted to the Regional Board a substantive analysis of the potential economic costs and damages that will occur if severe selenium load restrictions are imposed in the Grassland Basin. We recommend that the Regional Board place greater weight on those estimates in evaluating policy alternatives and compliance time schedules. In addition, we recommend that the Staff Report reflect the uncertainty regarding the possible impact of selenium in the San Joaquin River, and incorporate that uncertainty in its selection of policy alternatives. This may result in selection of a longer compliance time schedule, in order to minimize unnecessary costs of achieving severe reductions in selenium loads.

3. Page 93, Paragraph 1. This paragraph states that load reductions must occur to achieve the EPA 5 µg/l 4-day average water quality objective for selenium. While some load reductions will be required, it may not be necessary to reduce loads to the levels described by the TMML program. In fact, the TMML program described in the Staff Report is overly conservative and results in water quality parameters that are much better than the EPA 5 µg/l objective in most months of most years. Several state and federal agencies are currently working to develop a Real-Time Monitoring model of the San Joaquin River, for use in achieving water quality objectives. The Staff Report needs to mention the effort of those agencies and give greater consideration to the potential role of Real-Time Monitoring in achieving water quality objectives in the future. **In addition, the Staff Report should acknowledge that if local agencies demonstrate real-time capability that consideration would be given to this approach.**

4. Page 94, Table 7. This table demonstrates the severity of load reductions that would be required in a TMML program. In fact, we do not yet have the technology, nor the financial resources, to achieve the reductions described in Table 7, while still maintaining agricultural production. It may even be the case that Nature would discharge more selenium load into the San Joaquin River, each year, than the loads indicated in Table 7, even if agricultural lands were no longer irrigated. **The Water Authority recommends that two sets of information be included as footnotes with Table 7: 1) The load reductions called for in this table are not achievable with current technology and with available financial resources; and 2) The load reductions called for in this table are not necessary to achieve water quality objectives, but result from a statistical analysis of historical river conditions. These load reductions would not be necessary if a successful Real-Time Monitoring and Management program is implemented.**

5. Page 98, Proposed TMDL Submittal to EPA. The description of the TMML and TMDL programs does not describe sufficiently the conceptual nature of these programs or the likely impacts of imposing such load restrictions in the Grassland Basin. The purpose of a TMDL program is to minimize the probability of exceeding a water quality criterion with a desired level of frequency. Such a program may be appropriate in a river system with

relatively stable flow rates and where the relationship between inputs and outputs is understood by scientists, farmers, and resource managers. However, in the San Joaquin River system, a TMDL program will require severe reductions in selenium load that will often result in nearly pristine water quality conditions. This would be fine, if not for the very high costs of reducing selenium loads to achieve the TMML requirements.

The Staff Report does not describe the possibility of achieving water quality objectives and protecting beneficial uses of water by designing and implementing a successful Real-Time Monitoring and management program. The Water Authority is working with state and federal agencies to develop a successful program. This will enable farmers and district managers to achieve water quality objectives with less impact on agricultural production. As a result, the local and statewide economic impacts of achieving water quality objectives will be much smaller than those that would be imposed by a TMML program.

The Water Authority recommends that the description of the TMDL program be enhanced significantly to communicate the conceptual nature of such a program, the likely economic costs and damages, and the alternatives that may be available for protecting beneficial uses in the San Joaquin River. Some of the wording on Page 98, such as "Table 9 presents the recommended effluent limits required to meet applicable performance goals and water quality objectives..." should be changed to reflect the possibility that a Real-Time Monitoring Program may be successful in achieving water quality objectives, without the need for a TMDL program.

6. Page 99, Table 9. Regional Board Staff has reproduced this table from the Consensus Letter. At the time the Consensus Letter was written, all parties assumed that the Grassland Bypass would be in operation by October 1, 1995. This has not occurred due to circumstances beyond the control of the Water Authority. **Therefore, we believe the time period for compliance should coincide with the beginning of the use of the Grassland Bypass, which is now estimated to occur in May, 1996.**

7. Page 170, Draft Letter of Submittal for the TMDL Program. This letter describes the technical procedure used to develop the TMDL program, but it does not discuss the potential problems of implementing such a program in the Grassland Basin or the potential economic costs and damages. We understand that the Regional Board is required to submit a TMDL program to EPA for the San Joaquin River, because it has been designated as water quality impaired. However, we believe it would be very helpful if the Regional Board would assist us in communicating to EPA and others that there is an important effort underway to develop lower-cost methods for maintaining water quality and protecting beneficial uses. **The Water Authority recommends that the Regional Board expand the discussion of the TMDL program in its submittal letter, to include the concerns we have expressed regarding the appropriateness of that program and its potential economic impact on the region.**

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